

# UNION PACIFIC RAILROAD COMPANY

K. R. (KEN) WELCH  
Assistant Vice President  
Environmental Management

Mailing Address:  
Room 930  
1416 Dodge Street  
Omaha, Nebraska 68179  
Fax (402) 271-4461

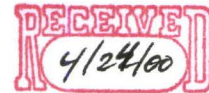


R. L. (RICK) EADES  
Director Environmental Field Operations  
W.E. (BILL) ROE  
Director Track Maintenance - Safety

Directors Environmental Field Operations  
B. A. (BROCK) NELSON - Northern Region  
L. A. (LANNY) SCHMID - Western Region  
G. (GLENN) THOMAS - Southern Region

Environmental Protection  
Omaha, NE

April 21, 2000



Mr. Kenneth V. Herstowski, P.E.  
USEPA  
RCRA Corrective Action & Permits Branch  
Air, RCRA and Toxics Division  
901 North 5<sup>th</sup> Street  
Kansas City, KS 66101

Dear Mr. Herstowski:

Please refer to the Proposed Administrative Order on Consent (the Order) for the Omaha, Nebraska Shops of the Union Pacific Railroad Company. More specifically, the site is described as 9<sup>th</sup> and Cass Streets, Omaha, Nebraska, RCRA I.D. No. NED000829754.

Per Paragraph 32 of the Order I am advising EPA that URS has been retained as the consultant on the Omaha Shops project. Mr. Jeff Smith, P.E., is the engineer employed by URS who has the technical expertise to perform all aspects of the work.

As a matter for the record, verbal authorization was requested and received from you on April 6, 2000, for conducting field work for completion of the OU1 Data Gaps Assessment and completion of the work as outlined in the RFI Workplan for Operable Units 2 and 3. This work is to be undertaken with the understanding that EPA may have comments forthcoming.

As you know, Union Pacific is endeavoring to satisfy the requirements of EPA, NDEQ, and the City of Omaha on the investigation and remediation of the Site. In order to be prepared to mobilize to the field for construction as soon as possible, the Union Pacific has solicited bids for the



R00176480  
RCRA RECORDS CENTER

AT

construction of the remedy and interim measures. We realize that modifications to the remedy could occur due to public and regulatory input but Union Pacific has accepted that risk. I am providing EPA with three copies of the bid documents and the two addenda that have been used to solicit bids. One additional copy each of the bid documents and the addenda are being transmitted to you for forwarding to the RCRA Section of the Nebraska Department of Environmental Quality (NDEQ).

If you wish to call me to discuss any aspect of the work please contact me at (402) 271-3675.

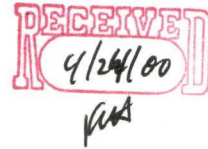
Yours truly,

A handwritten signature in blue ink, reading "Jeffrey D. McDermott". The signature is fluid and cursive, with the first name "Jeffrey" and last name "McDermott" clearly legible.

Jeffrey D. McDermott, P.E.  
Mgr. Environmental Site Remediation

ENC

C: Theodore L. Huscher - NDEQ (W/ENC)  
Norman Jackman - City of Omaha (W/ENC)  
C. Dale Jacobson - Jacobson Helgoth (W/ENC)  
Denny Brown - UPRR  
Jeff Smith - URSGWC



## **ADDENDUM NO. 2**

Name of Project:      Corrective Measures Implementation and Interim Action Removals  
                                 Omaha Shops  
                                 Union Pacific Railroad Company

Location:                Omaha, Nebraska

Date of Issue:          April 20, 2000

### **NOTICE TO ALL KNOWN PLANHOLDERS AND BIDDERS**

This Addendum is issued to all known individuals, firms, or corporations who have obtained or received specifications and drawings for the above referenced project.

**THIS ADDENDUM SHALL BE MADE PART OF THE CONTRACT SPECIFICATIONS AND PLANS.**

| <b>ADDENDUM NO. 2 INDEX</b>              | <b>ITEMS</b> |
|--|--------------|
| I.      Clarifications to Scope of Work  | 1            |
| II.     Deletions from the Scope of Work | 1 through 14 |

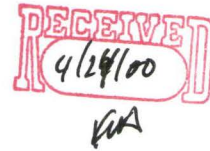
## **I. CLARIFICATIONS**

1. Service Item Nos. 5635839, 5635389, and 5645319 included on the Proposal and Bid Form in the Acetylene Sludge Pits Excavation work are listed with a quantity of 4,500 CY. The work will have a minimum quantity of about 800 CY. Your proposal should be priced for excavation, stockpiling, and loading of 4,500 cubic yards but the bidder is made aware that the quantity of work may very well be 800 CY and the price should take this into account.

## **II. DELETIONS**

1. Specification Section 01130, Paragraph 1.4 A, Subparagraph 2. Delete in its entirety. Separate payment will not be made for Prepare Health & Safety Plan (Site Specific) but the work is still required. Delete SI No. 5632850 in General Conditions and strike it from the Revised 4/19/2000 Proposal and Bid Form.
2. Specification Section 01130, Paragraph 1.4 A., Subparagraph 4. Delete the last sentence.
3. Specification Section 01130, Paragraph 1.4 B, Subparagraph 1. Delete in its entirety. Separate payment will not be made for Submittals but the work is still required. Delete SI No. 5635140 in Paint Barrel Contamination and strike it from Revised 4/19/2000 Proposal and Bid Form.
4. Specification Section 01130, Paragraph 1.4 B, Subparagraph 2. Delete in its entirety. Separate payment will not be made for Mobilization/Demobilization for the Paint Barrel Pits area but the work is still required. Delete SI No. 5635138 in Paint Barrel Contamination and strike it from Revised 4/19/2000 Proposal and Bid Form.
5. Specification Section 01130, Paragraph 1.4 C, Subparagraph 1. Delete in its entirety. Separate payment will not be made for Submittals but the work is still required. Delete SI No. 5635140 in Asbestos Contaminated Soil and strike it from Revised 4/19/2000 Proposal and Bid Form.
6. Specification Section 01130, Paragraph 1.4 C, Subparagraph 2. Delete in its entirety. Separate payment will not be made for Mobilization/Demobilization for the Asbestos Contaminated Soil area but the work is still required. Delete SI No. 5635138 in Asbestos Contaminated Soil and strike it from Revised 4/19/2000 Proposal and Bid Form.
7. Specification Section 01130, Paragraph 1.4 C, Subparagraph 3. Delete in its entirety. Separate payment will not be made for Prepare Health & Safety Plan (Site Specific) but the work is still required. Delete SI No. 5632850 in Asbestos Contaminated Soil and strike it from Revised 4/19/2000 Proposal and Bid Form.
8. Specification Section 01130, Paragraph 1.4 D, Subparagraph 1. Delete in its entirety. Separate payment will not be made for Submittals but the work is still required. Delete SI

- No. 5635140 in Petroleum Contaminated Soil and strike it from Revised 4/19/2000 Proposal and Bid Form.
9. Specification Section 01130, Paragraph 1.4 D, Subparagraph 2. Delete in its entirety. Separate payment will not be made for Mobilization/Demobilization for the Petroleum Contaminated Soil area but the work is still required. Delete SI No. 5635138 in Petroleum Contaminated Soil and strike it from Revised 4/19/2000 Proposal and Bid Form.
  10. Specification Section 01130, Paragraph 1.4 E, Subparagraph 1. Delete in its entirety. Separate payment will not be made for Submittals but the work is still required. Delete SI No. 5635140 in Lead Contaminated Soil and strike it from Revised 4/19/2000 Proposal and Bid Form.
  11. Specification Section 01130, Paragraph 1.4 E, Subparagraph 2. Delete in its entirety. Separate payment will not be made for Mobilization/Demobilization for the Lead Contaminated Soil area but the work is still required. Delete SI No. 5635138 in Lead Contaminated Soil and strike it from Revised 4/19/2000 Proposal and Bid Form.
  12. Specification Section 01130, Paragraph 1.4 E, Subparagraph 3. Delete in its entirety. Separate payment will not be made for Prepare Health & Safety Plan (Site Specific) but the work is still required. Delete SI No. 5632850 in Lead Contaminated Soil and strike it from Revised 4/19/2000 Proposal and Bid Form.
  13. Specification Section 01130, Paragraph 1.4 F, Subparagraph 1. Delete in its entirety. Separate payment will not be made for Submittals but the work is still required. Delete SI No. 5635140 in Acetylene Sludge Pits Excavation and strike it from Revised 4/19/2000 Proposal and Bid Form.
  14. Specification Section 01130, Paragraph 1.4 F, Subparagraph 2. Delete in its entirety. Separate payment will not be made for Mobilization/Demobilization for the Acetylene Sludge Pits Excavation area but the work is still required. Delete SI No. 5635138 in Acetylene Sludge Pits Excavation and strike it from Revised 4/19/2000 Proposal and Bid Form.



## **ADDENDUM NO. 1**

Name of Project:      Corrective Measures Implementation and Interim Action Removals  
                                 Omaha Shops  
                                 Union Pacific Railroad Company

Location:                Omaha, Nebraska

Date of Issue:          April 19, 2000

### **NOTICE TO ALL KNOWN PLANHOLDERS AND BIDDERS**

This Addendum is issued to all known individuals, firms, or corporations who have obtained or received specifications and drawings for the above referenced project.

**THIS ADDENDUM SHALL BE MADE PART OF THE CONTRACT SPECIFICATIONS AND PLANS.**

| <b>ADDENDUM NO. 1 INDEX</b>              | <b>ITEMS</b> |
|--|--------------|
| I.      Clarifications to Scope of Work  | 1 through 43 |
| II.     Additions to the Scope of Work   | 1 through 4  |
| III.    Deletions from the Scope of Work | 1 through 15 |

## **I. CLARIFICATIONS**

1. Gondola cars will be provided by the Owner for transportation of petroleum contaminated soil and soil from the Paint Barrel Pits. Approximately 50 cars will be available for this work, however, not all 50 gondola cars will be staged for loading at one time. Cars will be cycled between the Site and the disposal facility in Utah. The time for a car to make a complete trip is about 14 calendar days. The capacity of the cars varies, but is between 80 and 100 tons.
2. Gondola cars will be provided by the Owner for transportation of sludge from the Acetylene Sludge Pits. Approximately 20 cars will be available for this work, however, not all 20 gondola cars will be staged for loading at one time. Cars will be cycled between the Site and the disposal facility in Utah. The time for a car to make a complete trip is about 14 calendar days. The capacity of the cars varies but is about 90 tons.

The Contractor is responsible for ensuring that each car is not loaded beyond its maximum weight. The Contractor shall use a bucket scale, or other acceptable means, to gauge a load so that the number of loads can be counted to approximate the tonnage of material placed into a gondola car. The maximum weight of a car will be reached before the car is full of material. If a Contractor overloads a car and it is discovered while the car is enroute, the car will be removed from transit and the Contractor will be required to mobilize to the car's location and transload the material into a different car to reduce the weight of the overloaded car. This will be done at no cost to the Owner.

It is the experience of the Owner that precipitation has not caused a gondola car to be overloaded and a variance for precipitation is not considered.

3. The method used to stabilize the soil from the north end of the east Paint Barrel Pit, if required, shall be the Contractor's option. The ultimate goal is to have the material pass TCLP testing. The method chosen for stabilization shall be included as a submittal and can be completed ex-situ adjacent to the excavation.
4. If the Contractor chooses to use a proprietary mix to stabilize the soil from the north end of the east Paint Barrel Pit, the Contractor may propose that method as an alternative to the requested bid item.
5. Surfactants, such as calcium chloride, can be used as a means of dust suppression.
6. For Bid purposes, assume that the on-site soil stockpile will be located north and west of the proposed roadway embankment shown on Drawing Sheet 4 of 5.
7. All water used for dust control shall be taken from fire hydrants and shall be metered using an approved Metropolitan Utilities District meter.

8. Solids that accumulate in the bottom of the dewatering tanks can be placed in the Saturated Soil Staging Area and allowed to drain. These soils will be disposed with the petroleum contaminated soil.
9. The second phase of the lead removal, which will start in March 2001, is part of this contract.
10. The Owner will pay for the use of a flagman.
11. Local landfills and regional landfills are not capable of accepting gondola cars.
12. The Owner will pay for surveys of excavations and embankments.
13. A bond is not required for this project.
14. The backfilling in the Acetylene Sludge Pits will be required to make a transition from the complete excavation to the proposed track grade adjacent to the pits. At this time, the estimated quantity is 1,000 cubic yards of embankment and 2,000 cubic yards of grading of the existing banks, which is in addition to the embankment.
15. Engineer will be responsible for collecting free phase product from the excavation, the Contractor will be responsible for collecting free phase product from the dewatering system and placing the product in the recovered oil tank(s), currently located in the Treatment Building. Contractor shall be responsible for relocating the recovered oil tanks prior to demolition of the Treatment Building. Owner will arrange and pay to have the recovered oil tanks pumped out.
16. The location of the existing sewer shown on Drawing Sheet 4 of 5 is approximately 350 to 450 feet south of the southeast corner of the Paint Shop (in southern row of buildings) and is buried approximately 10 feet deep.
17. Suppliers for the GT No. 1 Geotextile in the roadway embankment are Huesker at (800) 942-9418 or (704) 588-5500, Contact: Tom Collins or Steve Lothspeich, and TC Marifi at (706) 693-2226, Contact: Greg Rosco.
18. Liners and top covers for placing in the gondola cars for transporting material from the Acetylene Sludge Pits are available from Transport Plastics at (800) 603-8277, Contact: Lisa or Al. The liner system item number is L-53 and the top cover is item number TC-53. These liners are preformed and fit into a car for ease of installation.
19. Discard the Proposal and Bid Form sent with the initial transmittal and use the enclosed Proposal and Bid Form. Four additional bid items have been added and the unit of measurement have changed on two items.

20. Specification Section 01130, Paragraph 1.4 B, Subparagraph 7. Delete the last sentence and replace with the following: "Payment shall be based on the actual weight tickets, in tons, from the disposal facility. A copy of the weight tickets shall be provided to the Contractor by the Owner for preparation of an invoice(s). A delay in invoicing will be expected."
21. Specification Section 01130, Paragraph 1.4 D, Subparagraph 10. Delete the last sentence and replace with the following: "Payment shall be based on the cubic yards of material transported to the soil stockpile, as determined in Item 13."
22. Specification Section 01130, Paragraph 1.4 D, Subparagraph 11. Delete the last sentence and replace with the following: "Payment shall be based on the actual weight tickets from the disposal facility. A copy of the weight tickets shall be provided to the Contractor by the Owner for preparation of an invoice(s). A delay in invoicing will be expected."
23. Specification Section 01130, Paragraph 1.4 D, Subparagraph 13. Delete the last sentence and replace with the following: "Payment shall be based on the cubic yards of material excavated as determined by a survey after the area is backfilled with excavated material compared to a survey of the area after backfilling with borrow material."
24. Specification Section 01130, Paragraph 1.4 D, Subparagraphs 15 and 16. Renumber subparagraphs to 16 and 17.
25. Specification Section 01130, Paragraph 1.4 E, Subparagraph 10. Delete the first sentence and replace with the following: "The lump sum bid for this item shall be full compensation for installation of a temporary storm drain inlet and grading as shown on the Drawings."
26. Specification Section 01130, Paragraph 1.4 F, Subparagraph 3. Delete the sentence and replace with the following: "The lump sum bid for this item shall be full compensation for monitoring the breathing zone air while working in the Acetylene Sludge Pits area."
27. Specification Section 01300, Paragraph 1.1 B, Subparagraph 1. Delete Subparagraph 1 and renumber Subparagraphs 2 and 3 to 1 and 2.
28. Specification Section 01300, Paragraph 1.2 F. Delete the sentence and replace with the following: "Specific submittals required are listed within the Submittals section of the Specifications. Required Submittals may not be limited to those listed."
29. Specification Section 01300, Paragraph 1.4 B, Subparagraph 1. Delete the first sentence and replace with the following: "Allow 7 days for Engineer to review and markup."
30. Specification Section 01300, Paragraph 3.2 C. Delete the first sentence and replace with the following: "Transmittals will be reviewed for overall design intent and returned to Contractor with action "A" (Accepted), "B" (Accepted as Noted), or "C" (Revise and Resubmit).

31. Specification Section 01300, Paragraph 3.2 C, Subparagraph 2a. Delete the first and second sentences and replace with the following: "One copy of the "C" portion of the Submittal Drawings will be marked up and returned to the Contractor."
32. Specification Section 01300, Paragraph 3.2 C, Subparagraph 2b. Delete the sentence and replace with the following: "Four copies of all Submittals marked "A" or "B" will be returned to the Contractor."
33. Specification Section 02260, Paragraph 1.2 A. Move to Specification Section 02260-2, Paragraph 1.3 C.
34. Specification Section 02260, Paragraphs 1.2 B through E. Re-letter to Paragraphs 1.2 A through D.
35. Specification Section 02260, Paragraphs 1.11 C, Subparagraph 1. Delete ", authorized visitors, and the Engineer personnel."
36. Specification Section 02260, Paragraphs 1.11 D, Subparagraph 1. Delete the second sentence and replace with the following: "An adequate supply of these items shall be available for worker and authorized visitor's personnel use."
37. Specification Section 02260, Paragraph 3.3 A. Delete sentence in its entirety and replace with the following: "The Engineer shall perform all area air monitoring activities."
38. Specification Section 02260, Paragraphs 3.3 C and D. Re-letter to Paragraphs 3.3 B and C.
39. Specification Section 02260, Paragraph 3.3 B, Subparagraph 1. Delete first sentence in its entirety and replace with the following: "The Engineer shall notify the Contractor and outdoor lead hazard abatement shall cease if measured airborne lead concentrations, collected during hazard abatement, exceed the preabatement airborne concentration levels."
40. Specification Section 02260, Paragraph 3.3 B, Subparagraph 2. Delete first sentence in its entirety and replace with the following: "The Contractor shall stop work immediately upon notification by the Engineer should either:"
41. Specification Section 02260, Paragraph 3.3 B, Subparagraphs 2b and 2c. Delete "0.3" and replace with "0.03."
42. Specification Section 02260, Paragraph 3.3 D, Subparagraphs 1a and 2a. Delete "URS Greiner Woodward Clyde" and replace with "Engineer."
43. Specification Section 02260, Paragraph 3.5 B, Subparagraph 1. Delete "URS Greiner Woodward Clyde" and replace with "Engineer."

## II. ADDITIONS

1. Specification Section 01130, Paragraph 1.4 A, Subparagraph 4. Add the following:  
"Mobilization/Demobilization: The lump sum bid for this item shall be full compensation for personnel, equipment, and supplies for mobilization and demobilization to the project site. Mobilization and demobilization shall include, but is not limited to, the movement of personnel, equipment, supplies, etc., to be used during the duration of the work, to and from the project site prior to beginning the work and following its completion. Costs for mobilization and demobilization may be placed in this item or in the individual work sections."
2. Specification Section 01130, Paragraph 1.4 D, Subparagraph 15. Add the following:  
"Stabilize Soil: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to dry saturated soil prior to loading into gondolas. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the tons of fly ash or approved agent used as determined by load tickets from the supplier."
3. Specification Section 01130, Paragraph 1.4 D, Subparagraph 18. Add the following:  
"Granular Material: The unit price bid for this item shall be full compensation for obtaining off-site granular material, transporting to site, and placing and compacting to above the water table prior to backfilling the excavation to keep the fill material dry. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of rock placed as determined by a survey after the area is excavated (Item 6) compared to a survey of the area after the rock is compacted in-place."
4. Specification Section 01130, Paragraph 1.4 D, Subparagraph 19. Add the following:  
"Geogrid: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to purchase and install Tensar SS2 geogrid prior to placing the granular material in the excavation (Item 18). The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the square yards of geogrid installed."

## III. DELETIONS

1. Specification Section 01130, Paragraph 1.1 B, Subparagraph 2. Delete in its entirety and renumber subparagraphs 3 and 4 to 2 and 3
2. Specification Section 01300, Paragraph 3.1 G. Delete in its entirety.
3. Specification Section 01300, Paragraph 3.2 C, Subparagraph 2. Delete "(Revise and Resubmit)."
4. Specification Section 01300, Paragraph 3.2 C, Subparagraph 2c. Delete the last sentence.
5. Specification Section 02200. Delete in its entirety and replace with the attached Section 02200.

CMI and IM Removals  
Union Pacific Railroad  
Omaha, Nebraska

Addendum No. 1  
April 19, 2000

6. Specification Section 02250. Delete in its entirety. Notes have been added to Specification Section 02200 and the Drawings.
7. Specification Section 02260, Paragraph 1.1 A, Subparagraph 1. Delete "02250 and."
8. Specification Section 02260, Paragraph 1.1 C, Subparagraph 3. Delete.
9. Specification Section 02260, Paragraph 3.3 B. Delete in its entirety.
10. Specification Section 02270. Delete in its entirety and replace with the attached Section 02270.
11. Sheet 1 of 5. Remove in its entirety and replace with the attached Sheet 1 of 5.
12. Sheet 2 of 5. Remove in its entirety and replace with the attached Sheet 2 of 5.
13. Sheet 3 of 5. Remove in its entirety and replace with the attached Sheet 3 of 5.
14. Sheet 4 of 5. Remove in its entirety and replace with the attached Sheet 4 of 5.
15. Sheet 5 of 5. Remove in its entirety and replace with the attached Sheet 5 of 5.

## **SECTION 02200 EARTHWORK**

### **PART 1 GENERAL**

#### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Excavation and backfill of soil.
- B. Related Sections
  - 1. Section 01300 - Submittals
  - 2. Section 02260 - Lead Hazard Abatement and Disposal
  - 3. Section 02270 - Asbestos Hazard Abatement and Disposal

#### **1.2 SUBMITTALS**

- A. Before starting the excavation, copies of all permits, licenses, and authorizations including, but not limited to, licenses of waste transporters and waste disposal facilities in the event the Contractor uses an alternative to the Owner selected disposal method.
- B. Before starting work, the Contractor shall submit copies of their Site Safety and Health Plan (SSHP) for review by the Engineer.
- C. Copies of completed manifests and certificates of disposal indicating quantities of the various wastes and product accepted for disposal
- D. Copies of the design of the saturated soil staging area, as described below.

#### **1.3 REFERENCES**

- A. American Society of Testing and Materials (ASTM)
  - 1. ASTM D448 Standard Classification for Sizes of Aggregate for Road and Bridge Construction
  - 2. ASTM D698 Moisture-Density Relationship of Soils and Soil Aggregate Mixtures, Using 5.5-lb. Rammer and 12-Inch Drop
  - 3. ASTM D1556 Density of Soil In-Place by the Sand Cone Method
  - 4. ASTM D2487 Classification of Soils for Engineering Purposes
  - 5. ASTM D2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - 6. ASTM D2937 Density of Soil In-Place by the Drive Cylinder Method
  - 7. ASTM D3017 Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - 8. ASTM D4253 Test Methods for Maximum Index Density of Soils Using a Vibratory Table
  - 9. ASTM D4254 Test Methods for Minimum Index Density of Soils and Calculations of Relative Density
  - 10. ASTM D4959 Determination of Water Content of Soil by Direct Heating Method
- B. Occupational Safety and Health Administration (OSHA)
  - 1. 29 CFR 1926 Safety and Health Regulations for Construction
  - 2. 29 CFR 1910.120: Hazardous Waste Operations and Emergency Response
- C. U.S. Department of Transportation (DOT)

1. 49 CFR Parts 171 through 178
- D. Nebraska Department of Roads
  1. Standard Specifications for Highway Construction
- E. Nebraska Health and Human Services System
  1. Title 178 - Chapter 12 Regulations Governing Water Well Construction, Pump Installation and Water Well Decommissioning Standards.

#### 1.4 QUALITY ASSURANCE

- A. Employ sufficient numbers of skilled workmen who are trained and experienced in the necessary crafts to complete the work. Use equipment adequate in size, capacity, and numbers to accomplish the work in a safe and timely fashion.
- B. Comply with appropriate Federal, State, and local government regulations.

#### 1.5 DELIVERY AND STORAGE

- A. Backfill materials may be deposited in stockpiles at points convenient for rehandling the material during the backfilling process. The location of stockpiles is subject to the approval of the Owner and Engineer.
- B. Keep drainage channels clear of stockpiled materials.

### PART 2 PRODUCTS

#### 2.1 SOIL MATERIALS

- A. On-site Borrow Soil:
  1. Fill materials shall be free of large or matted root systems, vegetation, other organic material, trash, demolition debris, frozen material, and brick or stone over a 4 inch dimension.
- B. Off-site Borrow Soil: Locally available, low plastic clay, silty clay, sandy clay, or clayey sand, classified under USCS as CL or SC.
- C. All sources of imported soil materials are subject to the approval of the Engineer. Obtain a written, notarized certification from the supplier stating that to the best of the supplier's knowledge and belief, there has never been contamination of the source with hazardous or toxic materials.
- D. Borrow fill material shall not be taken from the Loess Hill Land Formation in Iowa. A description showing the land formation by Township, Range, and Section is available for review at URS Corporation, 101 South 108<sup>th</sup> Avenue, Omaha, Nebraska 68154.

#### 2.2 GEOTEXTILE FABRIC

- A. Geotextile fabric shall be Huesker GT No. 1. The geotextile shall be pervious sheets of high-tenacity polyester in the warp direction. Polypropylene yarns may be used in the fill direction. The geotextile shall meet the following mechanical property requirements (minimum average roll value):
  1. Wide Width Tensile Strength ASTM D4595
 

|                             |          |
|-----------------------------|----------|
| a. Warp direction 5% strain | 292 kN/m |
| b. Warp direction ultimate  | 730 kN/m |
| c. Fill direction ultimate  | 130 kN/m |
  2. Seam Strength ASTM D 4884
 

|                     |         |
|---------------------|---------|
| a. Factory or field | 53 kN/m |
|---------------------|---------|
  3. Soil/Geotextile friction angle ASTM D5321
 

|  |            |
|--|------------|
|  | 24 degrees |
|--|------------|

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

#### **A. Utility Location**

1. Prior to the start of construction, communicate with local representatives of utilities companies including, but not limited to, oil, gas, telephone, communications, water, and sewer. Seek assistance in locating existing utilities to avoid conflicts during construction.
2. The location and type of utilities that may be present in the area are not shown completely on the Drawings.

#### **B. Clear excavation sites of logs, trees, roots, brush, tree trimmings, and other objectionable materials and debris. Contractor shall mow grass/weeds in all excavation areas as short as possible and gather all cuttings. All organic material shall be disposed of off-site by the Contractor in accordance with applicable regulations.**

#### **C. All monitoring wells and recovery wells located within the excavation limits shall be abandoned according to Nebraska Health and Human Services System - Title 178.**

#### **D. Remove pavements and walks within the excavation limits shown on the Drawings. Remove asphalt pavements and concrete pavements to the nearest joint. Concrete and asphalt may be stockpiled in the area shown on the drawings. All concrete and asphalt shall be decontaminated to remove gross contamination prior to stockpiling.**

#### **E. Contractor shall remove all concrete slabs and foundations in the excavation areas. Stockpile all concrete in the concrete stockpile as shown on the drawings. All concrete shall be decontaminated to remove gross contamination prior to stockpiling.**

#### **F. Contractor shall place all piping, fencing, miscellaneous metal debris encountered during site preparation and excavation in the miscellaneous debris stockpile shown on the Drawings.**

#### **G. Maintain vehicular and pedestrian traffic circulation in all public rights-of-way as directed by local authorities. Furnish, place, and maintain flags, flares, barricades, and signage to provide proper public safety.**

#### **H. Contractor shall construct a saturated soil staging area in the area shown on the Drawings. The saturated soil staging area will be separate from the general soil staging area and will be used to dry saturated soil prior to placement in gondola cars or other means of disposal. The saturated soil staging area will be a bermed and lined (with 20-mil plastic sheeting) area. The bottom of the area will slope to a point to facilitate collection of water from the saturated soil. Contractor shall collect the water and transfer to the PCS dewatering storage tanks.**

#### **I. Protection of Existing Structures and Utilities**

1. Where construction endangers adjacent structures, embankments, railways, or roadways, carefully support and protect such structures so that no damage occurs throughout the construction process and for a period of one year following construction. In case damage occurs, Contractor is responsible for restoring damaged structures to a condition acceptable to the Owner at no additional cost to the Owner.
2. Protect active utility lines to prevent interruption of service. Notify the Engineer immediately whenever an active utility line is encountered and service is interrupted. Immediately restore utility service by repairing damaged utility at no additional cost to the Owner. Immediately notify the Engineer if utilities are found to interfere with permanent facilities being constructed. Do not proceed with relocation of utilities or facilities until written instructions are received from the Engineer.

#### **J. All track will be removed by the Owner prior to start of work.**

### 3.2 EQUIPMENT

- A. Excavation equipment to be adequate capacity and size for contaminated soil removal. The use of suitable excavation machinery is permitted except in places where such operations may cause damage above or below ground, in which case, employ hand methods.
- B. Contractor may be required to use extended reach equipment, or construct an earthen loading ramp to facilitate loading of high sided gondola cars. The height from top of rail to the top of the car side can be a maximum of 13.5 feet.
- C. Compaction equipment to be suitable type and adequate capacity and size to obtain specified densities.
- D. Operate equipment in accordance with manufacturer's instructions.

### 3.3 SHORING, SHEETING, AND BRACING

- A. Sheet and brace excavations when necessary to prevent caving during excavation or to protect adjacent structures, property, workers, and the public. Maintain sheeting and bracing system until work is completed, and remove in a manner that does permit voids in backfill.
- B. Shoring systems shall be designed by a Registered Professional Engineer licensed in the State of Nebraska.

### 3.4 GENERAL EXCAVATION

- A. Excavation includes material of unclassified nature encountered including, but not limited to, clays, sands, gravels, conglomeratic boulders, weathered clay shales, rock, debris, and abandoned existing structures. Excavation includes removal and subsequent handling of materials excavated or otherwise handled in the performance of the work.
- B. Brace the excavation, if necessary, so that the workmen may work therein safely and efficiently. Any specific requirement of this specification may be modified as necessary to meet OSHA requirements. Excavation sideslopes must conform to safety requirements specified by Federal, State, and local government regulations.
- C. Blasting is not permitted.
- D. Engineer will approve excavated materials for reuse as fill. Excavated material designated for reuse will be stockpiled adjacent to the excavation.
- E. The Owner/Engineer shall be responsible for all soil sampling and chemical analysis.
- F. Contractor shall maintain the following minimum clearances:
  - 1. Northbound Abbott Drive Piers: 15 feet
  - 2. Southbound Abbott Drive Piers: 15 feet when open to traffic, no requirement once Abbott Drive is closed
  - 3. Tracks: 5 feet from end of ties
  - 4. High Tension Power Pole: Contractor may excavate to the foundation for the upper 5 feet, and then slope away from the pole foundation at a 1H:1V slope.
  - 5. Service road along east property line: 15 feet.

### 3.5 BACKFILL

- A. Backfill excavations to match pre-excavation grades unless otherwise noted.
- B. Place each fill classification (structural or non-supporting) as shown on Drawings. Place backfill uniformly around structures, taking care to prevent wedging of backfill.
- C. Backfill promptly as work progress permits, but not until the following activities have been completed:
  - 1. Inspection, testing, and recording of below grade utilities.

2. Removal of sheeting and bracing, and backfilling of voids.
3. Removal of trash and debris.
4. Acceptance by Engineer.

D. Compaction Requirements

1. Mechanically compact backfill placed in maximum uncompacted loose lifts of 8 inches. Densification by flooding or jetting is not allowed.
2. Selection of compaction equipment subject to approval of Engineer. Approval to use specific compaction equipment is not to be construed as guaranteeing or implying the equipment will meet compaction requirements and not result in damage to structures. Contractor is responsible for damage caused by compaction, and shall repair damage at no additional cost to the Owner.
3. Compact and adjust moisture contents of fill material to at least the following percentages of maximum dry density and at a moisture content within the limits specified as determined by ASTM D-698:
  - a. Structural Fill: 95 percent of maximum dry density as at a moisture content within minus 3 to plus 3 percentage points of the optimum moisture content.
  - b. Nonsupporting Fill: 90 percent of maximum dry density as determined by ASTM D-698, at a moisture content within minus 5 to plus 5 percentage points of the optimum moisture content.

3.6 FIELD QUALITY CONTROL

A. Approval Of Subgrades

1. Notify the Engineer when excavations have reached required subgrade.
2. When, in the opinion of the Engineer, native subgrade soils are not suitable, remove the unsuitable material to depth as directed by the Engineer. Construct a stable subgrade to the required grade, as approved by the Engineer.
3. Reconstruct subgrades damaged by freezing, frost, rain, or construction activities, as directed by the Engineer and at no additional cost to Owner.

B. Compaction Testing

1. The Owner shall employ an approved testing agency to collect, analyze and record visual observations and/or density tests. The following number of density tests will be done:
  - a. Non-supporting Fill: One test per lift every 1,000 square yards.
  - b. Structural Fill: One test per lift every 600 square yards.
  - c. Engineer maintains the right to decrease the number of test if tests results consistently pass required densities.
2. Do not cover a lift of soil that has not been tested or passed a test, unless approved by the Engineer. Recompact or replace and recompact materials until acceptable test results are obtained.
3. Engineer may request additional compaction based on hand probes or visual evidence.

3.7 SITE RESTORATION

- A. At completion of work at each location, with the exception of the lead excavation, remove equipment, unused materials, temporary facilities, debris, and miscellaneous items resulting from or used during construction. Restore all areas as directed by the Engineer and the Paint Barrel Pit and the two small Asbestos areas as nearly as possible to original condition.

- B. The lead excavation shall be left open. In areas where the excavation depths exceed three feet, the Contractor shall backfill the excavation as per Section 2200 for the backfill classification as directed by the Engineer.

END OF SECTION 02200



**SECTION 02270**  
**ASBESTOS HAZARD ABATEMENT AND DISPOSAL**

**PART 1 GENERAL**

**1.1 SUMMARY OF WORK**

- A. This specification includes:
  - 1. Requirements for removal of asbestos-containing soil from the areas and depths shown on the Drawings followed by hauling and disposal as per Sections 02070 and 02200.
  - 2. Requirements for worker and general public health and safety during activities that disturb asbestos-containing soil.
- B. Following the removal of asbestos-containing soil, the site shall be covered with clean fill as specified in Section 02200 and shown on the Drawings. Dust suppression and control specified herein shall be employed until an initial cover of clean fill material has been placed.
- C. Related Sections
  - 1. Section 01300 - Submittals
  - 2. Section 02200 - Earthwork

**1.2 REFERENCES**

- A. American National Standards Institute (ANSI)
  - 1. ANSI Z87.1 Occupational and Educational Eye and Face Protection
  - 2. ANSI Z88.2 Practices for Respiratory Protection
- B. American Society of Testing Materials (ASTM)
  - 1. ASTM D 4397 Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
  - 2. ASTM E 1368 Visual Inspection of Asbestos Abatement/Demolition Projects
- C. Code Of Federal Regulations (CFR)
  - 1. 29 CFR 1910 Occupational Safety and Health Standards
  - 2. 29 CFR 1926 Safety and Health Regulations for Construction
  - 3. 29 CFR 1926 Section 1101
  - 4. 40 CFR 61 National Emissions Standards for Hazardous Air Pollutants
  - 5. 40 CFR 763 Asbestos
  - 6. 49 CFR 171 Hazardous Substances
  - 7. 49 CFR 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
  - 8. 49 CFR 173 Shippers - General Requirements for Subpart M Shipments and Packaging
- D. Environmental Protection Agency (EPA)
  - 1. EPA 340/1-90-018 Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance
  - 2. EPA 340/1-90-019 Asbestos/NESHAP Adequately Wet Guidance
- E. National Fire Protection Association
  - 1. NFPA 10 Standard for Portable Fire Extinguishers
  - 2. NFPA 70 National Electrical Code

3. NFPA 90A Standards for the Installation of Air Conditioning and Ventilation Systems
4. NFPA 1012 Standards for Fire Officer Professional Qualifications
- F. National Institute for Occupational Safety And Health (NIOSH)
  1. NIOSH Pub No. 84-100 (1984 to current version) NIOSH Manual of Analytical Methods
- G. Underwriters Laboratories (UL)
  1. UL 586 High-Efficiency, Particulate, Air Filter Units
- H. State of Nebraska
  1. Nebraska Revised Statute 81-1504, 81-1505(1), 81-1505 (12) - Environmental Protection Act
  2. Title 129 - Department of Environmental Quality Chapter 12 - Hazardous Air Pollutants, Emission Standards
  3. Title 184 - Department of Health Chapter 1 - Rules of Practice and Procedures of the Department of Health
  4. Nebraska Revised Statute 71-6301 to 71-6317 - Asbestos Control Act
  5. Title 178 - Department of Health Chapter 22 - Regulations and Standards Governing: Asbestos Projects; Licensing of Business Entities for Asbestos Activities; Certification of Asbestos Occupations; Training and Review Courses for Asbestos Occupations; Asbestos Project Notification Requirements; Work Practices to be Followed for Asbestos Projects and Asbestos Waste Disposal

### 1.3 DEFINITIONS

- A. *Adequately Wet* means to sufficiently mix or penetrate with liquid to prevent the release of particulate. If visible emissions are observed coming from ACM, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted. In demolition activities, the term adequately wet becomes particularly important. Since asbestos concentrations in the air must be maintained below 0.1 fibers per cubic centimeter (f/cc) or background levels, as determined by air monitoring prior to work initiation, visible dust cannot be used as a marker. Thus area air monitoring during any aspects of demolition that include ACM manipulation shall be required.
- B. *Amended Water* contains a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.
- C. *Friable ACM* means any material containing more than 1 percent asbestos as determined using Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.
- D. *Non-friable ACM* means any material containing more than 1 percent asbestos as determined using Polarized Light Microscopy (PLM), that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- E. *Category I Non-friable ACM* means asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using Polarized Light Microscopy (PLM). During normal demolition using wrecking ball and dust suppression techniques, Category I Non-friable ACM can be safely removed without negative air pressure containment.
- F. *Category II Non-friable ACM* means any material, excluding Category I Non-friable ACM, containing more than 1 percent asbestos as determined using Polarized Light Microscopy (PLM), that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

- G *Asbestos Regulated Work Area* is an area contained and controlled either by an enclosed containment (full containment area, single or double bulkhead containment area, mini-containment area), modified containment, glove bag, or outdoor techniques. ACM operations are performed and isolated by physical boundaries to prevent the spread of ACM and control access to authorized persons. A full containment, single or double bulkhead containment area, mini-containment area, modified containment, and glove bag work area is isolated within a containment enclosure in that ACM operations are performed within negative air pressure containment. An outdoor regulated work area is not isolated within a containment enclosure, but is otherwise secured by means of physical barriers, boundary warning tape, and signage, etc., to control access by unauthorized persons.
- H *Time-Weighted Average (TWA)* is an 8-hour time weighted average of airborne concentration of fibers (longer than 5 micrometers) per cubic centimeter of air that represents the employee's 8-hour workday as determined by Appendix A of 29 CFR 1926, Section 1101. For employees working less than 6 hours, the TWA shall be calculated using the number of hours worked.

#### 1.4 SUBMITTALS

- A. Copies of licenses, permits, and worker training and medical certificates as required by applicable Federal, state, and local regulations shall be obtained at least 7 days before the start of the asbestos hazard abatement project.
- B. Location of proposed construction debris landfill, along with landfill's permits, for approval by the Engineer.
- C. Asbestos Hazard Abatement Plan (AHAP)
1. The Engineer shall review the AHAP, which will be prepared by the Contractor. The AHAP identifies the work procedures, health, and safety measures to be used in asbestos hazard abatement. The plan will include the following key elements:
    - a. Location of asbestos containing components keyed to project drawings.
    - b. Hazard abatement methods for each asbestos containing waste stream.
    - c. Training requirements as required by Federal, state, and local regulations.
    - d. Unique problems associated with the asbestos hazard abatement project.
    - e. Sketch of asbestos control areas and decontamination areas.
    - f. Eating, drinking, smoking, and rest room procedures.
    - g. Sequencing of asbestos related work.
    - h. Personnel protective equipment, respiratory protection program and controls.
    - i. Engineering controls, containment structures and safety measures.
    - j. Worker exposure assessment procedures.
    - k. Work practice controls.
    - l. Housekeeping.
    - m. Hygiene facilities and practice.
    - n. Medical surveillance, including medical removal protection.
    - o. Sampling, testing and analytical methods to include personnel air sampling requirements of 29 CFR 1926 Section .62 and environmental air sampling.

Procedures will include frequency, locations, and sampling and analytical methods to be used.

#### 1.5 COORDINATION WITH OTHER WORK

- A. Abatement and disposal work shall be coordinated with existing work and/or concurrent work being performed in adjacent areas.

#### 1.6 SAFETY AND HEALTH REGULATORY REQUIREMENTS

- A. Work shall be performed in accordance with requirements of 29 CFR 1926, especially Section .62. Matters of interpretation of the standards shall be submitted to the appropriate agency for resolution before starting work. Where these requirements vary, the most stringent shall apply.

#### 1.7 RESPIRATORY PROTECTION PROGRAM

- A. A respiratory protection program shall be established as required by 29 CFR 1926 Section .103 and .62 and in accordance with 29 CFR 1910 Section .134. An approved respirator shall be furnished to each employee and visitor required to enter a asbestos work control area. A fit test shall be conducted in accordance with 29 CFR 1926 Section .62, Appendix D.

#### 1.8 HAZARD COMMUNICATION PROGRAM

- A. A Hazard Communication Program shall be implemented in accordance with 29 CFR 1926 Section .59.

#### 1.9 SAFETY AND HEALTH COMPLIANCE

- A. In addition to detailed requirements of these specifications, the work shall comply with applicable laws, ordinances, criteria, rules, and regulations of Federal, State of Nebraska, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials and with the applicable requirements of 29 CFR 29 1910, 29 CFR 1926, 40 CFR 61, Subpart A, and 40 CFR 61, Subpart M, NFPA 10, NFPA 70, NFPA 90A, NFPA 1012. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of specifications, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as defined by the Engineer shall apply.

#### 1.10 TRAINED AND COMPETENT PERSONNEL

##### A. Certified Industrial Hygienist (CIH)

1. Personal and area/environmental air sampling and training plan shall be developed and conducted under the direction of a CIH experienced in asbestos Abatement/Demolition. The CIH must be currently certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene (ABIH). For the purpose of this contract, the Contractor shall retain the services of an independent CIH to oversee all contract required air monitoring. Duties of the CIH shall also include preparation or review of the Asbestos Hazard Abatement Plan (AHAP). The CIH shall seal, sign, and date the AHAP certifying that these plans comply with these specifications and all applicable regulations.

##### B. Industrial Hygiene Technicians (IHTs)

1. Industrial Hygiene Technicians (IHTs) shall assist with activities such as air monitoring, decontamination, and safety oversight. The IHT(s) shall have:
  - a. Two (2) years working experience in the asbestos Abatement/Demolition industry
  - b. Working knowledge of applicable Federal, State of Nebraska, and local occupational safety and health regulations, and
  - c. Formal training in occupational safety and health.
  - d. Demonstrable experience in asbestos air monitoring techniques, including successful completion of NIOSH 582-Sampling and Evaluating Airborne Asbestos Dust.

- C. Prior to the commencement of work, each worker shall be instructed by the Contractor's Competent Person as to site specific project requirements.

#### 1.11 POSTED WARNINGS AND NOTICES

##### A. Warning Signs

1. Contractor shall ensure that all personnel understand the warning signs. Warning signs and tape shall be provided at the regulated boundaries and entrances to asbestos regulated work areas. Signs shall be located at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area.
2. Warning signs shall be in vertical format conforming to 29 CFR 1910, and 29 CFR 29 1926, minimum 20 by 14 inches and displaying the following legend in the lower panel.

| Legend                                     | Lettering                         |
|--|-----------------------------------|
| <b>Danger</b>                              | 3-inch Sans Serif Gothic or Block |
| <b>Asbestos</b>                            | 1-inch Sans Serif Gothic or Block |
| <b>Cancer and Lung Disease Hazard</b>      | 1-inch Sans Serif Gothic or Block |
| <b>Authorized Personnel Only</b>           | 1-inch Sans Serif Gothic or Block |
| <b>Respirators and Protective Clothing</b> | 1-inch Gothic                     |
| <b>Are Required in this Area</b>           | 1-inch Gothic                     |

##### B. WARNING LABELS

1. Warning labels shall be affixed to all asbestos disposal containers used to contain asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to requirements specified herein are acceptable. Warning labels shall conform to CFR 29 Part 1926 and shall be of sufficient size to be clearly legible displaying the following legend:

**DANGER  
CONTAINS ASBESTOS FIBERS  
AVOID CREATING DUST  
CANCER and LUNG DISEASE  
HAZARD**

##### C. Worker Information

1. Right-to-know notices shall be placed in clearly visible areas of the work site in compliance with Federal, state, and local regulations.

##### D. Air Monitoring Results

1. Daily air monitoring results shall be prepared so as to be easily understood by the workers, and shall be placed in a clearly visible area of the work site.

##### E. Emergency Telephone Numbers

1. A list of telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, emergency squad, police and fire departments, the Engineer, Contractor representatives who can be reached 24 hours per day, and professional consultants directly involved in the project.

## 1.12 EQUIPMENT AND MATERIALS

### A. Rental Equipment

1. If rental equipment is to be used, written notification shall be provided to the rental agency, concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment and the steps that shall be taken to decontaminate such equipment. A written acceptance of the terms of the Contractor's notification shall be obtained from the rental agency.

### B. Air Monitoring Equipment

1. The Contractor's CIH shall select and approve the air monitoring equipment to be provided and used by the Contractor for evaluation of airborne asbestos fiber concentrations. The equipment shall include, but not be limited to:
  - a. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute when equipped with a sampling train of tubing and filter cassette, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit that shall maintain a constant flow even as filter resistance increases due to accumulation of fiber and debris on the filter surface.
  - b. Standard 25 millimeter diameter, 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with nonconductive barrels and shrink bands, to be used with low flow pumps in accordance with 29 CFR 1926, for personal air sampling.
2. Appropriate plastic tubing to connect the air sampling pump to the selected filter cassette.
3. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 degrees to plus 140 degrees Fahrenheit and traceable to a National Institute for Standards and Technology (NIST) primary standard.

### C. Personal Protective Equipment (PPE)

1. Three complete sets of Personal Protective Equipment (PPE) shall be made available to the Owner and authorized visitors for entry to the asbestos regulated work area at all times for inspection of the asbestos regulated work area. The Owner and authorized visitors shall be provided with training equivalent to that provided to Contractor employees in the selection, fitting, and use of the required PPE and the site safety and health requirements.
2. The Contractor's CIH and designated competent person supervisor shall select and approve all the required PPE to be used. The Contractor's CIH shall evaluate on a regular basis that the PPE is being used correctly. The following listed PPE shall be initially required in all asbestos regulated areas.
3. Respirators
  - a. Respirators shall be selected and used in accordance with manufacturers recommendations, and shall be approved by the National Institute for Occupational Safety and Health (NIOSH) for use in environments containing airborne asbestos fibers. Personnel who handle ACM, enter asbestos regulated work areas that require the wearing of a respirator, or who are otherwise carrying out Abatement/Demolition activities that require the wearing of a respirator, shall be provided with approved respirators that are fully protective of the worker at the measured or anticipated airborne asbestos concentration level to be encountered.
  - b. For Air-Purifying Respirators, the particulate filter portion of the cartridges or canister approved for use in airborne asbestos environments shall be Type H, high-efficiency particulate air (HEPA). As a minimum a half-mask air-purifying respirator shall be worn during the startup of Abatement/Demolition activities.

- (a) Cartridges or canisters shall be disposed of at the conclusion of each work shift. When wet decon is used, cartridges or canisters shall be disposed of during each decon activity. Any change in disposal frequency and the decision logic for this change shall be provided by the Contractor's CIH in writing for approval by the Engineer.
  - (b) The upgrading or downgrading of respirator type, from the minimum requirements specified for start-up, shall be made by the Contractor's CIH based on the measured or anticipated airborne asbestos fiber concentrations to be encountered. All recommendations made by the Contractor's CIH to downgrade or upgrade respirator type shall be submitted in writing to the Engineer for acceptance.
  - (c) Respiratory protection shall comply with the 29 CFR 1926, and 29 CFR 1910. A qualitative or quantitative fit test conforming to 29 CFR 1926, Section 1101, Appendix C shall be conducted by the Contractor's CIH for each Contractor worker required to wear a respirator. A respirator fit test shall be performed for each worker prior to initially wearing a respirator on this project and every 6 months thereafter. If physical changes in a worker develop that shall affect the fit, a new fit test shall be performed.
- c. Functional fit checks in accordance with the manufacturer's recommendation shall be performed by employees each time a respirator is put on.
- 4. Whole Body Protection
  - a. Personnel exposed to asbestos shall be provided with whole body protection and such protection shall be worn properly. The Contractor's CIH and competent person shall select and approve the whole body protection to be used. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area. Reusable whole body protection worn shall be either disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area or be properly laundered in accordance with 29 CFR 1926 and as specified in the Contractor's AHAP. Asbestos Abatement/Demolition whole body protection shall not be removed from the work site by a worker to be cleaned.
  - b. Disposable-impermeable coveralls with a zipper front shall be provided. Sleeves shall be secured at the wrists, and foot coverings secured at the ankles.
  - c. Cloth work clothes shall be provided for wear under the protective coverall and foot coverings when work is being conducted in low temperature conditions. Cloth work clothes shall be either disposed of as asbestos contaminated material or properly laundered in accordance with 29 CFR 1926 and as specified in the Contractor's AHAP.
- 5. Gloves
  - a. Disposable plastic or rubber gloves shall be provided to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Where there is the potential for hand injuries (i.e., scrapes, punctures, cuts, etc.) a suitable outer glove shall be provided and used.
- 6. Foot Coverings
  - a. If rubber boots are not used, foot wear and disposable foot coverings shall be provided. Rubber boots shall be used in moist or wet areas. Only rubber boots shall be removed from the asbestos regulated work area after being thoroughly decontaminated. All other protective foot covering shall be disposed of as ACM.
- 7. Head Covering

- a. Hood type disposable head covering shall be provided. In addition, protective headgear (hard hats) shall be provided as required. Hard hats shall only be removed from the asbestos regulated work area after being thoroughly decontaminated.

#### 8. Protective Eye Wear

- a. Contact lenses shall not be worn in asbestos regulated work areas. When vision correction is necessary to perform the work task, prescription safety eyewear shall be used. Fog-proof goggles shall be worn by personnel engaged in asbestos Abatement/Demolition activities in the asbestos regulated work area when the use of a full face-piece respirator is not required. Eye protection provided shall be in accordance with ANSI Z87.1. Protective Clothing
- b. The Contractor shall furnish, at no cost to personnel, equipment/clothing for protection from airborne and waterborne asbestos debris. An adequate supply of these items shall be available for worker, authorized visitor, and the Owner/Engineer's personnel use. Workers and visitors shall not take protective clothing and equipment off the work site at any time. Protective clothing includes:
  - (a) Coveralls (Whole Body Protective Coverings): Full-body coveralls and head covers shall be worn by workers in the work area. Sleeves shall be secured at the wrist and pants legs at the ankle with tape. Permeable clothing shall be provided in heat-stress conditions. Where non-disposable coveralls are provided, these coveralls shall be cleaned after each wearing. Cleaning of coveralls and other non-disposable clothing shall be in accordance with the provisions for cleaning in 29 CFR 1926 Section .62.
  - (b) Boots: Deconnable work boots with nonskid soles or impermeable work boot covers over leather work boots shall be worn by workers.
  - (c) Gloves: Disposable outer work gloves shall be provided to each worker and shall be worn while the worker is in the work area. Gloves shall not be removed from the work area, and shall be disposed of as asbestos contaminated waste at the end of the work.
  - (d) Hard Hats: Head protection (hard hats) shall be provided as required by OSHA and 29 CFR 1926 for workers and authorized visitors. Protective plastic strap suspension hats shall be used. Hard hats shall be worn at all times that work is in progress. Hats shall remain in the work area until the project is completed. Hats shall be thoroughly cleaned, decontaminated, and bagged before being removed from the work area at the end of the project.
  - (e) Eye Protection: Fog-proof goggles for personnel engaged in asbestos abatement operations shall be worn when the use of a full face piece respirator is not required.
  - (f) Work Clothing: Cloth work clothes shall be provided for wearing under the disposable protective coveralls and foot coverings.

#### D. Expendable Supplies

- 1. Impermeable containers shall be used to receive and retain asbestos contaminated Personnel Protective Equipment (PPE) until disposal. Containers shall be labeled in accordance with EPA, DOT and OSHA standards.
- 2. Chemicals shall be properly labeled and stored in leak-tight containers.

#### 1.13 STORAGE OF MATERIALS

- A. Materials shall be stored in a place and manner that protects them from damage and contamination. During periods of cold weather, plastic materials shall be protected from the cold. No flammable or hazardous materials shall be stored inside any building. Regularly

inspect materials to identify damaged or deteriorating items. Damaged or deteriorated items shall not be used and shall be removed from the site as soon as they are discovered. Any materials which become contaminated with asbestos waste shall be disposed of consistent with the requirements of these specifications. Stored materials shall not present a hazard or an inconvenience to workers and/or visitors.

## **PART 2 PRODUCTS (NOT APPLICABLE)**

## **PART 3 EXECUTION**

### **3.1 GENERAL EXECUTION REQUIREMENTS**

- A. The Contractor's CIH and competent person shall assure the following general requirements are met:
  - 1. Personnel shall wear and utilize protective clothing and equipment as discussed herein.
  - 2. Eating, smoking, drinking, or applying cosmetics shall not be permitted in the asbestos regulated work area.
  - 3. All hot work (burning, cutting, welding, etc.) shall be conducted under strictly controlled conditions in conformance with 29 CFR 1926.
  - 4. Personnel of other trades not engaged in asbestos Abatement/Demolition activities shall not be exposed at any time to airborne concentrations of asbestos unless all the administrative and personal protective provisions as required herein are complied with.
- B. The Contractor shall stop Abatement/Demolition work in the asbestos regulated work area immediately when the measured airborne total fiber concentrations:
  - 1. Equals or exceeds 0.01 f/cc or the pre-abatement/Demolition concentration, (whichever is greater) outside the asbestos regulated work area, or
  - 2. Equals or exceeds 1.0 f/cc inside the asbestos regulated work area.
- C. The Contractor shall correct the condition to the satisfaction of the Owner, including visual inspection and air samplings. Work resumption shall only be allowed upon notification by the Engineer. Corrective actions shall be documented.

### **3.2 SOIL HANDLING**

- A. All soils shall be handled using engineering controls designed to minimize the airborne dispersal of dusts and fibers.
- B. Contaminated Soil Removal
  - 1. Soils shall be removed as shown on the Drawings until all remaining soil contains less than one percent (1%) asbestos by weight
  - 2. Soils with visible contamination may be either:
    - a. Screened for asbestos contamination and then segregated as regards to relative asbestos contaminant content, or
    - b. Removed in bulk with visible asbestos contaminant
  - 3. All soils shall be made wet using low pressure mists from either low pressure sprayers, mist walls or regulated hose nozzles.
  - 4. Wet soils shall be removed by either mechanical pick up and/or high volume vacuum methods using machines constructed specifically for asbestos containing soil and debris removal. Mechanical pick up shall be defined as either back hoe bucket removal, front end loader, or shoveling or a combination thereof. The Contractor will have the option to use whichever removal technique is most cost effective and timely.

- a. Start removal at the point of work farthest from the entrance of the asbestos regulated work area.
  - b. Proceed to remove soil in a direction toward the exit of the asbestos regulated work area.
  - c. Limit traffic onto the fresh soil surface.
5. Contaminated soil shall be placed in six-mil polyethylene disposal bags, lined truck beds, drums or other container as approved by the Engineer.

### 3.3 WORKER PROTECTION AND DECONTAMINATION

- A. The Contractor shall protect employees in accordance with OSHA Standard 29 CFR 1926.58, and EPA Standard 40 CFR, Part 61, Subpart M, applicable state regulations and all requirements specified as follows:
- B. Each worker and authorized visitor shall, upon entering the job site don appropriate respirator and protective clothing before entering the asbestos regulated work area.

### 3.4 DECONTAMINATION PROTOCOLS – ASBESTOS REGULATED WORK AREA

- A. Each worker and authorized visitor shall, each time he/she leaves the asbestos regulated work area, remove gross contamination from clothing prior to leaving the asbestos regulated work area.
  - 1. Wet wipes shall be used to wipe down the respirator and boots/boot covers.
  - 2. All negative air pressure respirator or Powered Air Purifying Respirator (PAPR) cartridges shall be maintained in place until the worker exits the asbestos regulated work area where soil removal is occurring and enters the change area/room.
  - 3. When PAPR are used, the decontamination procedure shall be altered to permit reuse of the filter.
  - 4. The PAPR filters shall be capped prior to leaving the asbestos regulated work area. The surface of the PAPR and the filter shall be washed, taking care not to wet the filter interior.
  - 5. The flow rate through the filter shall be tested prior to reuse. A minimum of 4 cubic feet per minute (CFM) shall be required.

### 3.5 PROTECTION OF ADJACENT WORK AREAS

- A. Asbestos Abatement/Demolition work shall be performed without contamination of adjacent work areas. Where such work or area is contaminated as verified by the Engineer using visual inspection and/or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor as deemed appropriate by the Engineer.

### 3.6 ASBESTOS HANDLING PROCEDURES

- A. The Contractor shall employ proper handling procedures in accordance with 29 CFR 1926 and 40 CFR 61, Subpart M and the specifications requirements herein. The specific Abatement/Demolition techniques and items identified shall be detailed in the Contractor's AHAP including but not limited to details of construction materials, equipment, and handling procedures.

### 3.7 AIR SAMPLING

- A. The Engineer shall perform area sampling and analysis of airborne concentration of asbestos fibers in accordance with CFR 29 Part 1926 Section 1926.1101.
- B. The Contractor shall perform personal air monitoring. Samples shall be taken for at least 25 percent of the workers in each shift or a minimum of two -- whichever is greater. Results of the personal samples shall be posted at the job site and made available to the Engineer.

- C. The Contractor shall maintain a fiber concentration inside the regulated work area equal to or less than 0.1 f/cc expressed as an 8 hour, TWA during the conduct of the asbestos Abatement/Demolition.
- D. If fiber concentration rises above 0.1 f/cc, work procedures shall be investigated with the Owner/Engineer to determine the cause.
- E. At the discretion of the Engineer, fiber concentration may exceed 0.1 f/cc but shall not exceed 1.0 f/cc expressed as an 8-hour TWA.
- F. The Contractor's workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as averaged over a sampling period of 30 minutes.
- G. The Contractor shall stop work immediately and notify the Engineer should either of the following occur:
  - 1. An environmental concentration of 1.0 f/cc expressed as an 8-hour TWA, or
  - 2. A personal excursion concentration of 1.0 f/cc expressed as a 30-minute sample occurs inside the regulated work area.
- H. The Contractor shall then implement additional engineering controls and work practice controls to reduce airborne fiber levels below these prescribed limits in the work area. Work shall not restart until authorized by the Engineer.

### 3.8 ANALYTICAL REQUIREMENTS

- A. The Owner shall provide an independent testing laboratory with qualified analysts and appropriate equipment to conduct sample analyses of air samples using the methods prescribed in 29 CFR 1926 Section 1926.58 to include NIOSH Pub No. 84-100 Method 7400. Sampling performed in accordance with 29 CFR 1926 Section 1926.1101
- B. For personal sampling required by 29 CFR 1926 Section 1926.1101 and the NIOSH Pub No. 84-100 Method 7400 shall use Phase Contrast Microscopy (PCM) for analysis.
- C. Air monitoring results shall be calculated at the 95 percent upper confidence level.

### 3.9 SAMPLING PRIOR TO ASBESTOS WORK

- A. The baseline air sampling shall be established by the Engineer one day prior to demolition operations for each Abatement/Demolition area on the site. The background shall be established by performing area sampling in similar but uncontaminated sites.

### 3.10 SAMPLING DURING ASBESTOS ABATEMENT/DEMOLITION WORK

- A. The Contractor's CIH shall provide personal sampling and the Engineer shall provide area sampling as indicated in 29 CFR 1926 Section 1926.1101, State of Nebraska and local requirements, and in accordance with the Contractor's AHAP.

### 3.11 SITE INSPECTION

- A. While performing asbestos removal work, the Contractor shall be subject to on-site inspection by the Engineer who may be assisted by or represented by quality assurance, safety and industrial hygiene personnel. If the work is found to be in violation of this specifications, the Engineer may issue a stop work order to be in effect immediately and until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.

### 3.12 CLEAN-UP AND DISPOSAL

- A. Waste asbestos material shall be disposed of at an EPA, State of Nebraska and local approved asbestos landfill. For temporary storage, sealed impermeable containers shall be stored in an asbestos waste load-out unit or in a storage/transportation conveyance (i.e.; dumpster, roll-off waste boxes, etc.) in a manner as accepted by and in an area as assigned by the Engineer. Procedure for hauling and disposal shall comply with 40 CFR 61, Subpart M, State of Nebraska, regional, and local standards.

### 3.13 TITLE TO MATERIALS

- A. Material resulting from Abatement/Demolition work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, State of Nebraska, and Federal regulations and herein.

### 3.14 COLLECTION AND DISPOSAL OF ASBESTOS

- A. Asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing, shall be collected and placed in sealed leak-tight, containers (e.g. double 6-mil plastic bags), sealed 6-mil double wrapped polyethylene sheet, sealed fiberboard boxes, or other approved containers. Waste within the containers must be wetted in case the container is breached. A warning label and Department of Transportation (DOT) label shall be affixed or preprinted on each bag.

### 3.15 ASBESTOS WASTE SHIPMENT RECORD

- A. The Contractor shall complete and provide final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 61, Subpart M and other required State of Nebraska waste manifest shipment records within 3 days of delivery to the landfill.

END OF SECTION 02270



**PAINT BARREL PITS ANALYTICAL DATA  
(HITS ONLY)**

| Field<br>Identification | Date<br>Sampled | Method | Chemical               | Result | Units | Qualifier | TCLP<br>Result | Units | Qualifier |
|-------------------------|-----------------|--------|------------------------|--------|-------|-----------|----------------|-------|-----------|
| UPPB-SB01-1202          | 2/3/99          | 8260   | Tetrachloroethene      | 9.2    | ug/kg |           |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Benzo(ghi)perylene     | 0.46   | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Indeno(1,2,3-cd)pyrene | 0.48   | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Dibenzofuran           | 0.52   | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Naphthalene            | 0.82   | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Fluorene               | 0.87   | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Benzo(k)fluoranthene   | 0.88   | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Anthracene             | 1.1    | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Benzo(a)pyrene         | 1.2    | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Benzo(b)fluoranthene   | 1.3    | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Chrysene               | 1.3    | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Benzo(a)anthracene     | 1.4    | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Pyrene                 | 3      | ug/g  |           |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Fluoranthene           | 3.8    | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8270   | Phenanthrene           | 4.4    | ug/g  | J         |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8081   | a-Chlordane            | 0.017  | ug/g  |           |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8081   | g-Chlordane            | 0.025  | ug/g  |           |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 8081   | 4,4'-DDD               | 0.1515 | ug/g  |           |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 7060   | Arsenic                | 4.6    | mg/kg |           | 0.084          | mg/L  |           |
| UPPB-SB01-1202          | 2/3/99          | 6010   | Barium                 | 130    | mg/kg |           | 2.3            | mg/L  |           |
| UPPB-SB01-1202          | 2/3/99          | 6010   | Chromium               | 7.7    | mg/kg |           |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 245.5  | Mercury                | 0.076  | mg/kg |           |                |       |           |
| UPPB-SB01-1202          | 2/3/99          | 6010   | Zinc                   | 43     | mg/kg |           |                |       |           |

J = Estimated Value

**PAINT BARREL PITS ANALYTICAL DATA  
(HITS ONLY)**

| Field Identification | Date Sampled | Method | Chemical               | Result | Units | Qualifier | TCLP Result | Units | Qualifier |
|----------------------|--------------|--------|------------------------|--------|-------|-----------|-------------|-------|-----------|
| UPPB-SB02-0201       | 2/3/99       | 8260   | Tetrachloroethene      | 8.4    | ug/kg |           | 0.08        | mg/L  |           |
| UPPB-SB02-0201       | 2/3/99       | 8270   | Chrysene               | 1      | ug/g  |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 8270   | Phenanthrene           | 1.1    | ug/g  |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 8270   | Benzo(a)pyrene         | 1.3    | ug/g  |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 8270   | Pyrene                 | 1.3    | ug/g  |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 8270   | Fluoranthene           | 1.4    | ug/g  |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 8270   | Benzo(b)fluoranthene   | 1.6    | ug/g  |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 8270   | Indeno(1,2,3-cd)pyrene | 1.6    | ug/g  |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 8270   | Benzo(k)fluoranthene   | 1.8    | ug/g  |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 8270   | Benzo(ghi)perylene     | 1.9    | ug/g  |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 7060   | Arsenic                | 19     | mg/kg |           | 0.094       | mg/L  |           |
| UPPB-SB02-0201       | 2/3/99       | 6010   | Barium                 | 200    | mg/kg |           | 0.763       | mg/L  |           |
| UPPB-SB02-0201       | 2/3/99       | 6010   | Chromium               | 10     | mg/kg |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 6010   | Lead                   | 84     | mg/kg |           | 0.14        | mg/L  |           |
| UPPB-SB02-0201       | 2/3/99       | 245.5  | Mercury                | 3.14   | mg/kg |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 7740   | Selenium               | 1      | mg/kg |           |             |       |           |
| UPPB-SB02-0201       | 2/3/99       | 6010   | Zinc                   | 110    | mg/kg |           |             |       |           |
| UPPB-SB02-0702       | 2/3/99       | 8270   | Phenanthrene           | 0.47   | ug/g  | J         |             |       |           |
| UPPB-SB02-0702       | 2/3/99       | 8270   | Fluoranthene           | 0.53   | ug/g  | J         |             |       |           |
| UPPB-SB02-0702       | 2/3/99       | 8270   | Benzyl butyl phthalate | 0.76   | ug/g  | J         |             |       |           |
| UPPB-SB02-0702       | 2/3/99       | 7060   | Arsenic                | 6.4    | mg/kg |           | 0.082       | mg/L  |           |
| UPPB-SB02-0702       | 2/3/99       | 6010   | Barium                 | 170    | mg/kg |           | 2           | mg/L  |           |
| UPPB-SB02-0702       | 2/3/99       | 6010   | Chromium               | 5.9    | mg/kg |           |             |       |           |
| UPPB-SB02-0702       | 2/3/99       | 6010   | Lead                   | 9500   | mg/kg |           | 5.8         | mg/L  |           |
| UPPB-SB02-0702       | 2/3/99       | 245.5  | Mercury                | 0.055  | mg/kg |           |             |       |           |
| UPPB-SB02-0702       | 2/3/99       | 6010   | Zinc                   | 84     | mg/kg |           |             |       |           |

J = Estimated Value

**PAINT BARREL PITS ANALYTICAL DATA  
(HITS ONLY)**

| Field Identification | Date Sampled | Method | Chemical               | Result | Units | Qualifier | TCLP Result | Units | Qualifier |
|----------------------|--------------|--------|------------------------|--------|-------|-----------|-------------|-------|-----------|
| UPPB-TP01-0101       | 1/27/99      | 8260   | Tetrachloroethene      | <      | ug/kg |           | 0.04        | mg/L  |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Anthracene             | 14.2   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Benzo(a)anthracene     | 28.1   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Benzo(k)fluoranthene   | 15.9   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Benzo(b)fluoranthene   | 17.1   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Benzo(a)pyrene         | 18.9   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Benzo(ghi)perylene     | 5.3    | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Chrysene               | 26.9   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Dibenzo(a,h)anthracene | 2.8    | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | 2-Methylnaphthalene    | 3.2    | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Acenaphthylene         | 4.6    | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Acenaphthene           | 5.4    | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Naphthalene            | 5.4    | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Indeno(1,2,3-cd)pyrene | 7.2    | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Dibenzofuran           | 7.3    | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Fluorene               | 10.5   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Pyrene                 | 56.6   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Phenanthrene           | 60.3   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 8270   | Fluoranthene           | 64.4   | ug/g  |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 7060   | Arsenic                | 12     | mg/kg |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 6010   | Barium                 | 220    | mg/kg |           | 1.6         | mg/L  |           |
| UPPB-TP01-0101       | 1/27/99      | 6010   | Cadmium                | 16     | mg/kg |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 6010   | Chromium               | 6.1    | mg/kg |           |             |       |           |
| UPPB-TP01-0101       | 1/27/99      | 6010   | Lead                   | 700    | mg/kg |           | 1.5         | mg/L  |           |
| UPPB-TP01-0101       | 1/27/99      | 245.5  | Mercury                | 0.939  | mg/kg |           |             |       |           |

J = Estimated Value



**FREE PHASE RECOVERY AREA ANALYTICAL DATA  
(HITS ONLY)**

| Field<br>Identification | Date<br>Sampled | Method | Chemical                       | Result | Units | Qualifier |
|-------------------------|-----------------|--------|--------------------------------|--------|-------|-----------|
| UPFP-SB06-0601          | 1/28/99         | OA-2   | Total Extractable Hydrocarbons | 12000  | ug/g  | J         |
|                         |                 |        | Diesel                         | 12000  | ug/g  | J         |
| UPFP-SB11-1001          | 1/28/99         | OA-2   | Total Extractable Hydrocarbons | 25000  | ug/g  | J         |
|                         |                 |        | Diesel                         | 25000  | ug/g  | J         |
| UPFP-SB14-1001          | 1/29/99         | OA-2   | Total Extractable Hydrocarbons | 25000  | ug/g  | J         |
|                         |                 |        | Diesel                         | 25000  | ug/g  | J         |
| UPFP-SB23-0601          | 1/27/99         | OA-2   | Total Extractable Hydrocarbons | 8600   | ug/g  | J         |
|                         |                 |        | Diesel                         | 8300   | ug/g  | J         |
|                         |                 |        | Motor Oil                      | 300    | ug/g  | J         |
| UPFP-SB25-0301          | 1/29/99         | OA-2   | Total Extractable Hydrocarbons | 9500   | ug/g  | J         |
|                         |                 |        | Diesel                         | 8900   | ug/g  | J         |
|                         |                 |        | Motor Oil                      | 570    | ug/g  | J         |
| UPBL-SB01-0601          | 3/7/00          | 6010   | Lead                           | <10    | mg/kg |           |
|                         |                 | 8260   | Benzene                        | <160   | ug/kg |           |
|                         |                 | 8260   | Toluene                        | <160   | ug/kg |           |
|                         |                 | 8260   | Ethylbenzene                   | <160   | ug/kg |           |
|                         |                 | 8260   | Xylenes                        | <160   | ug/kg |           |
| UPBL-SB02-1001          | 3/7/00          | 6010   | Lead                           | <10    | mg/kg |           |
|                         |                 | 8260   | Benzene                        | <160   | ug/kg |           |
|                         |                 | 8260   | Toluene                        | <160   | ug/kg |           |
|                         |                 | 8260   | Ethylbenzene                   | 1,640  | ug/kg |           |
|                         |                 | 8260   | Xylenes                        | 5,350  | ug/kg |           |
| UPBL-SB03-1001          | 3/7/00          | 6010   | Lead                           | <10    | mg/kg |           |
|                         |                 | 8260   | Benzene                        | <160   | ug/kg |           |
|                         |                 | 8260   | Toluene                        | <160   | ug/kg |           |
|                         |                 | 8260   | Ethylbenzene                   | 398    | ug/kg |           |
|                         |                 | 8260   | Xylenes                        | <420   | ug/kg |           |
| UPBL-SB04-1001          | 3/7/00          | 6010   | Lead                           | 17     | mg/kg |           |
|                         |                 | 8260   | Benzene                        | <160   | ug/kg |           |
|                         |                 | 8260   | Toluene                        | 355    | ug/kg |           |
|                         |                 | 8260   | Ethylbenzene                   | 2,520  | ug/kg |           |
|                         |                 | 8260   | Xylenes                        | 5,610  | ug/kg |           |
| UPBL-SB05-0601          | 3/7/00          | 6010   | Lead                           | 28     | mg/kg |           |
|                         |                 | 8260   | Benzene                        | <160   | ug/kg |           |
|                         |                 | 8260   | Toluene                        | <160   | ug/kg |           |
|                         |                 | 8260   | Ethylbenzene                   | <160   | ug/kg |           |
|                         |                 | 8260   | Xylenes                        | <160   | ug/kg |           |
| UPBL-SB06-1001          | 3/7/00          | 6010   | Lead                           | <10    | mg/kg |           |
|                         |                 | 8260   | Benzene                        | 194    | ug/kg |           |
|                         |                 | 8260   | Toluene                        | 166    | ug/kg |           |
|                         |                 | 8260   | Ethylbenzene                   | 5,480  | ug/kg |           |
|                         |                 | 8260   | Xylenes                        | 1,760  | ug/kg |           |

J = Estimated Value



**EIGHTH STREET YARD METALS DATA  
(HITS ONLY)**

| Identification | Date<br>Sampled | Method | Chemical | Result | Qualifier | Units |
|----------------|-----------------|--------|----------|--------|-----------|-------|
| UPES-SB01-0101 | 2/3/99          | 7060   | Arsenic  | 30     |           | mg/kg |
| UPES-SB01-0101 | 2/3/99          | 7421   | Lead     | 430    |           | mg/kg |
| UPES-SB01-0301 | 2/3/99          | 7060   | Arsenic  | 120    |           | mg/kg |
| UPES-SB01-0301 | 2/3/99          | 7421   | Lead     | 2700   |           | mg/kg |
| UPES-SB01-0401 | 2/3/99          | 7060   | Arsenic  | 930    |           | mg/kg |
| UPES-SB01-0401 | 2/3/99          | 7421   | Lead     | 7100   |           | mg/kg |
| UPES-SB02-0101 | 2/4/99          | 7060   | Arsenic  | 120    |           | mg/kg |
| UPES-SB02-0101 | 2/4/99          | 7421   | Lead     | 1600   |           | mg/kg |
| UPES-SB02-0301 | 2/4/99          | 7060   | Arsenic  | 720    |           | mg/kg |
| UPES-SB02-0301 | 2/4/99          | 7421   | Lead     | 8400   |           | mg/kg |
| UPES-SB02-0401 | 2/4/99          | 7060   | Arsenic  | 430    |           | mg/kg |
| UPES-SB02-0401 | 2/4/99          | 7421   | Lead     | 13000  |           | mg/kg |
| UPES-SB03-0101 | 2/4/99          | 7060   | Arsenic  | 86     |           | mg/kg |
| UPES-SB03-0101 | 2/4/99          | 7421   | Lead     | 1100   |           | mg/kg |
| UPES-SB03-0301 | 2/4/99          | 7060   | Arsenic  | 100    |           | mg/kg |
| UPES-SB03-0301 | 2/4/99          | 7421   | Lead     | 2000   |           | mg/kg |
| UPES-SB03-0401 | 2/4/99          | 7060   | Arsenic  | 16     |           | mg/kg |
| UPES-SB03-0401 | 2/4/99          | 7421   | Lead     | 150    |           | mg/kg |
| UPES-SB04-0101 | 2/4/99          | 7060   | Arsenic  | 160    |           | mg/kg |
| UPES-SB04-0101 | 2/4/99          | 7421   | Lead     | 4600   |           | mg/kg |
| UPES-SB04-0301 | 2/4/99          | 7060   | Arsenic  | 30     | J         | mg/kg |
| UPES-SB04-0301 | 2/4/99          | 7421   | Lead     | 360    | J         | mg/kg |
| UPES-SB04-0401 | 2/4/99          | 7060   | Arsenic  | 22     |           | mg/kg |
| UPES-SB04-0401 | 2/4/99          | 7421   | Lead     | 1.4    |           | mg/kg |
| UPES-SB05-0101 | 2/4/99          | 7060   | Arsenic  | 86     |           | mg/kg |
| UPES-SB05-0101 | 2/4/99          | 7421   | Lead     | 7100   |           | mg/kg |
| UPES-SB05-0301 | 2/4/99          | 7060   | Arsenic  | 8.2    |           | mg/kg |
| UPES-SB05-0301 | 2/4/99          | 7421   | Lead     | 12     |           | mg/kg |
| UPES-SB05-0401 | 2/4/99          | 7060   | Arsenic  | 5.9    |           | mg/kg |
| UPES-SB05-0401 | 2/4/99          | 7421   | Lead     | 13     |           | mg/kg |
| UPES-SB06-0101 | 2/4/99          | 7060   | Arsenic  | 110    |           | mg/kg |
| UPES-SB06-0101 | 2/4/99          | 7421   | Lead     | 2900   |           | mg/kg |
| UPES-SB06-0301 | 2/4/99          | 7060   | Arsenic  | 5.7    |           | mg/kg |
| UPES-SB06-0301 | 2/4/99          | 7421   | Lead     | 19     |           | mg/kg |
| UPES-SB06-0401 | 2/4/99          | 7060   | Arsenic  | 5.2    |           | mg/kg |
| UPES-SB06-0401 | 2/4/99          | 7421   | Lead     | 5.2    |           | mg/kg |
| UPES-SB07-0101 | 2/4/99          | 7060   | Arsenic  | 54     |           | mg/kg |
| UPES-SB07-0101 | 2/4/99          | 7421   | Lead     | 1600   |           | mg/kg |
| UPES-SB07-0301 | 2/4/99          | 7060   | Arsenic  | 13     |           | mg/kg |
| UPES-SB07-0301 | 2/4/99          | 7421   | Lead     | 41     |           | mg/kg |
| UPES-SB07-0401 | 2/4/99          | 7060   | Arsenic  | 19     |           | mg/kg |
| UPES-SB07-0401 | 2/4/99          | 7421   | Lead     | 120    |           | mg/kg |
| UPES-SB08-0101 | 2/4/99          | 7060   | Arsenic  | 61     |           | mg/kg |
| UPES-SB08-0101 | 2/4/99          | 7421   | Lead     | 2200   |           | mg/kg |
| UPES-SB08-0301 | 2/4/99          | 7060   | Arsenic  | 5.8    | J         | mg/kg |
| UPES-SB08-0301 | 2/4/99          | 7421   | Lead     | 22     | J         | mg/kg |

J = Estimated Value

# EIGHTH STREET YARD METALS DATA (HITS ONLY)

| Identification | Date    |      | Method  | Chemical | Result | Qualifier | Units |
|----------------|---------|------|---------|----------|--------|-----------|-------|
|                | Sampled |      |         |          |        |           |       |
| UPES-SB08-0401 | 2/4/99  | 7060 | Arsenic | 5.6      |        |           | mg/kg |
| UPES-SB08-0401 | 2/4/99  | 7421 | Lead    | 44       |        |           | mg/kg |
| UPES-SB09-0101 | 2/4/99  | 7060 | Arsenic | 70       |        |           | mg/kg |
| UPES-SB09-0101 | 2/4/99  | 7421 | Lead    | 2200     |        |           | mg/kg |
| UPES-SB09-0301 | 2/4/99  | 7060 | Arsenic | 11       |        |           | mg/kg |
| UPES-SB09-0301 | 2/4/99  | 7421 | Lead    | 270      |        |           | mg/kg |
| UPES-SB09-0401 | 2/4/99  | 7060 | Arsenic | 53       |        |           | mg/kg |
| UPES-SB09-0401 | 2/4/99  | 7421 | Lead    | 2200     |        |           | mg/kg |
| UPES-SB10-0101 | 2/5/99  | 7060 | Arsenic | 28       |        |           | mg/kg |
| UPES-SB10-0101 | 2/5/99  | 7421 | Lead    | 1100     |        |           | mg/kg |
| UPES-SB10-0301 | 2/5/99  | 7060 | Arsenic | 34       |        |           | mg/kg |
| UPES-SB10-0301 | 2/5/99  | 7421 | Lead    | 630      |        |           | mg/kg |
| UPES-SB10-0401 | 2/5/99  | 7060 | Arsenic | 11       |        |           | mg/kg |
| UPES-SB10-0401 | 2/5/99  | 7421 | Lead    | 750      |        |           | mg/kg |
| UPES-SB11-0101 | 2/4/99  | 7060 | Arsenic | 310      |        |           | mg/kg |
| UPES-SB11-0101 | 2/4/99  | 7421 | Lead    | 2200     |        |           | mg/kg |
| UPES-SB11-0301 | 2/4/99  | 7060 | Arsenic | 5.7      |        |           | mg/kg |
| UPES-SB11-0301 | 2/4/99  | 7421 | Lead    | 56       |        |           | mg/kg |
| UPES-SB11-0401 | 2/4/99  | 7060 | Arsenic | 16       |        |           | mg/kg |
| UPES-SB11-0401 | 2/4/99  | 7421 | Lead    | 4.5      |        |           | mg/kg |
| UPES-SB12-0101 | 2/4/99  | 7060 | Arsenic | 200      |        |           | mg/kg |
| UPES-SB12-0101 | 2/4/99  | 7421 | Lead    | 4000     |        |           | mg/kg |
| UPES-SB12-0301 | 2/4/99  | 7060 | Arsenic | 9.1      |        | J         | mg/kg |
| UPES-SB12-0301 | 2/4/99  | 7421 | Lead    | 160      |        | J         | mg/kg |
| UPES-SB12-0401 | 2/4/99  | 7060 | Arsenic | 43       |        |           | mg/kg |
| UPES-SB12-0401 | 2/4/99  | 7421 | Lead    | 4.2      |        |           | mg/kg |
| UPES-SB13-0101 | 2/5/99  | 7060 | Arsenic | 170      |        |           | mg/kg |
| UPES-SB13-0101 | 2/5/99  | 7421 | Lead    | 3200     |        |           | mg/kg |
| UPES-SB13-0301 | 2/5/99  | 7060 | Arsenic | 230      |        |           | mg/kg |
| UPES-SB13-0301 | 2/5/99  | 7421 | Lead    | 3100     |        |           | mg/kg |
| UPES-SB13-0401 | 2/5/99  | 7060 | Arsenic | 8        |        |           | mg/kg |
| UPES-SB13-0401 | 2/5/99  | 7421 | Lead    | 17       |        |           | mg/kg |
| UPES-SB14-0101 | 2/5/99  | 7060 | Arsenic | 54       |        |           | mg/kg |
| UPES-SB14-0101 | 2/5/99  | 7421 | Lead    | 2800     |        |           | mg/kg |
| UPES-SB14-0301 | 2/5/99  | 7060 | Arsenic | 42       |        |           | mg/kg |
| UPES-SB14-0301 | 2/5/99  | 7421 | Lead    | 840      |        |           | mg/kg |
| UPES-SB14-0401 | 2/5/99  | 7060 | Arsenic | 4.8      |        |           | mg/kg |
| UPES-SB14-0401 | 2/5/99  | 7421 | Lead    | 14       |        |           | mg/kg |
| UPES-SB15-0101 | 2/5/99  | 7060 | Arsenic | 27       |        |           | mg/kg |
| UPES-SB15-0101 | 2/5/99  | 7421 | Lead    | 840      |        |           | mg/kg |
| UPES-SB15-0301 | 2/5/99  | 7060 | Arsenic | 160      |        |           | mg/kg |
| UPES-SB15-0301 | 2/5/99  | 7421 | Lead    | 5300     |        |           | mg/kg |
| UPES-SB15-0401 | 2/5/99  | 7060 | Arsenic | 21       |        |           | mg/kg |
| UPES-SB15-0401 | 2/5/99  | 7421 | Lead    | 340      |        |           | mg/kg |
| UPES-SB16-0101 | 2/5/99  | 7060 | Arsenic | 44       |        |           | mg/kg |
| UPES-SB16-0101 | 2/5/99  | 7421 | Lead    | 400      |        |           | mg/kg |
| UPES-SB16-0301 | 2/5/99  | 7060 | Arsenic | 64       |        |           | mg/kg |
| UPES-SB16-0301 | 2/5/99  | 7421 | Lead    | 290      |        |           | mg/kg |

J = Estimated Value

**EIGHTH STREET YARD METALS DATA  
(HITS ONLY)**

| Identification | Date    | Method | Chemical | Result | Qualifier | Units |
|----------------|---------|--------|----------|--------|-----------|-------|
|                | Sampled |        |          |        |           |       |
| UPES-SB16-0401 | 2/5/99  | 7060   | Arsenic  | 9.1    |           | mg/kg |
| UPES-SB16-0401 | 2/5/99  | 7421   | Lead     | 54     |           | mg/kg |
| UPES-SB17-0101 | 3/3/00  | 6010   | Lead     | 290    |           | mg/kg |
| UPES-SB17-0201 | 3/3/00  | 6010   | Lead     | 24     |           | mg/kg |
| UPES-SB17-0301 | 3/3/00  | 6010   | Lead     | <10    |           | mg/kg |
| UPES-SB17-0401 | 3/3/00  | 6010   | Lead     | 92     |           | mg/kg |
| UPES-SB18-0101 | 3/3/00  | 6010   | Lead     | <10    |           | mg/kg |
| UPES-SB18-0201 | 3/3/00  | 6010   | Lead     | 26     |           | mg/kg |
| UPES-SB18-0301 | 3/3/00  | 6010   | Lead     | <10    |           | mg/kg |
| UPES-SB18-0401 | 3/3/00  | 6010   | Lead     | <10    |           | mg/kg |
| UPES-SB19-0101 | 3/6/00  | 6010   | Lead     | 190    |           | mg/kg |
| UPES-SB19-0201 | 3/6/00  | 6010   | Lead     | 54     |           | mg/kg |
| UPES-SB19-0301 | 3/6/00  | 6010   | Lead     | 190    |           | mg/kg |
| UPES-SB19-0401 | 3/6/00  | 6010   | Lead     | 150    |           | mg/kg |
| UPES-SB20-0101 | 3/6/00  | 6010   | Lead     | 230    |           | mg/kg |
| UPES-SB20-0201 | 3/6/00  | 6010   | Lead     | 350    |           | mg/kg |
| UPES-SB20-0301 | 3/6/00  | 6010   | Lead     | 380    |           | mg/kg |
| UPES-SB20-0401 | 3/6/00  | 6010   | Lead     | 170    |           | mg/kg |
| UPES-SB21-0101 | 3/6/00  | 6010   | Lead     | 200    |           | mg/kg |
| UPES-SB21-0201 | 3/6/00  | 6010   | Lead     | 400    |           | mg/kg |
| UPES-SB21-0301 | 3/6/00  | 6010   | Lead     | <10    |           | mg/kg |
| UPES-SB21-0401 | 3/6/00  | 6010   | Lead     | <10    |           | mg/kg |
| UPES-SB22-0101 | 3/6/00  | 6010   | Lead     | 270    |           | mg/kg |
| UPES-SB22-0201 | 3/6/00  | 6010   | Lead     | 120    |           | mg/kg |
| UPES-SB22-0301 | 3/6/00  | 6010   | Lead     | 370    |           | mg/kg |
| UPES-SB22-0401 | 3/6/00  | 6010   | Lead     | <10    |           | mg/kg |
| UPES-SB23-0101 | 3/6/00  | 6010   | Lead     | 820    |           | mg/kg |
| UPES-SB23-0201 | 3/6/00  | 6010   | Lead     | <10    |           | mg/kg |
| UPES-SB23-0301 | 3/6/00  | 6010   | Lead     | 12     |           | mg/kg |
| UPES-SB23-0401 | 3/6/00  | 6010   | Lead     | 110    |           | mg/kg |
| UPES-SB23-0801 | 3/6/00  | 6010   | Lead     | 97     |           | mg/kg |
| UPES-SB23-1101 | 3/6/00  | 6010   | Lead     | <10    |           | mg/kg |
| UPES-SB24-0101 | 3/7/00  | 6010   | Lead     | 1,700  |           | mg/kg |
| UPES-SB24-0201 | 3/7/00  | 6010   | Lead     | 710    |           | mg/kg |
| UPES-SB24-0301 | 3/7/00  | 6010   | Lead     | 480    |           | mg/kg |
| UPES-SB24-0401 | 3/7/00  | 6010   | Lead     | 140    |           | mg/kg |
| UPES-SB24-0801 | 3/7/00  | 6010   | Lead     | 61     |           | mg/kg |
| UPES-SB24-1101 | 3/7/00  | 6010   | Lead     | 33     |           | mg/kg |
| UPES-SB25-0101 | 3/7/00  | 6010   | Lead     | 100    |           | mg/kg |
| UPES-SB25-0201 | 3/7/00  | 6010   | Lead     | 500    |           | mg/kg |
| UPES-SB25-0301 | 3/7/00  | 6010   | Lead     | 56     |           | mg/kg |
| UPES-SB25-0401 | 3/7/00  | 6010   | Lead     | 110    |           | mg/kg |
| UPCT-SB01-0101 | 3/7/00  | 6010   | Lead     | 660    |           | mg/kg |
| UPCT-SB01-0201 | 3/7/00  | 6010   | Lead     | 400    |           | mg/kg |
| UPCT-SB01-0301 | 3/7/00  | 6010   | Lead     | 840    |           | mg/kg |
| UPCT-SB02-0101 | 3/7/00  | 6010   | Lead     | 8,700  |           | mg/kg |
| UPCT-SB02-0201 | 3/7/00  | 6010   | Lead     | 140    |           | mg/kg |
| UPCT-SB02-0301 | 3/7/00  | 6010   | Lead     | 6,800  |           | mg/kg |

J = Estimated Value

**EIGHTH STREET YARD METALS DATA  
(HITS ONLY)**

| Identification | Date    |  | Method | Chemical | Result | Qualifier | Units |
|----------------|---------|--|--------|----------|--------|-----------|-------|
|                | Sampled |  |        |          |        |           |       |
| UPCT-SB03-0101 | 3/7/00  |  | 6010   | Lead     | 1,500  |           | mg/kg |
| UPCT-SB03-0201 | 3/7/00  |  | 6010   | Lead     | 1,500  |           | mg/kg |
| UPCT-SB03-0301 | 3/7/00  |  | 6010   | Lead     | 43     |           | mg/kg |
| UPCT-SB04-0101 | 3/7/00  |  | 6010   | Lead     | 470    |           | mg/kg |
| UPCT-SB04-0201 | 3/7/00  |  | 6010   | Lead     | 140    |           | mg/kg |
| UPCT-SB04-0301 | 3/7/00  |  | 6010   | Lead     | 340    |           | mg/kg |
| UPCT-SB05-0101 | 3/7/00  |  | 6010   | Lead     | 140    |           | mg/kg |
| UPCT-SB05-0201 | 3/7/00  |  | 6010   | Lead     | 16     |           | mg/kg |
| UPCT-SB05-0301 | 3/7/00  |  | 6010   | Lead     | 29     |           | mg/kg |
| UPCT-SB06-0101 | 3/7/00  |  | 6010   | Lead     | 1,100  |           | mg/kg |
| UPCT-SB06-0201 | 3/7/00  |  | 6010   | Lead     | 20     |           | mg/kg |
| UPCT-SB06-0301 | 3/7/00  |  | 6010   | Lead     | 30     |           | mg/kg |
| UPCT-SB07-0101 | 3/7/00  |  | 6010   | Lead     | 1,300  |           | mg/kg |
| UPCT-SB07-0201 | 3/7/00  |  | 6010   | Lead     | 26     |           | mg/kg |
| UPCT-SB07-0301 | 3/7/00  |  | 6010   | Lead     | 88     |           | mg/kg |
| UPCT-SB08-0101 | 3/7/00  |  | 6010   | Lead     | 1,400  |           | mg/kg |
| UPCT-SB08-0201 | 3/7/00  |  | 6010   | Lead     | 23     |           | mg/kg |
| UPCT-SB08-0301 | 3/7/00  |  | 6010   | Lead     | 22     |           | mg/kg |

J = Estimated Value



**ACETYLENE SLUDGE PITS ANALYTICAL DATA  
(HITS ONLY)**

| Field<br>Identification | Date<br>Sampled | Method | Chemical                  | Result | Units | Qualifier | TCLP<br>Result | Units | Qualifier |
|-------------------------|-----------------|--------|---------------------------|--------|-------|-----------|----------------|-------|-----------|
| UPAS-TP01-0101          | 1/26/99         | 8260   | Tetrachloroethene         | 38700  | ug/kg |           | 1.3            | mg/L  |           |
| UPAS-TP01-0101          | 1/26/99         | 8260   | trans-1,3-Dichloropropene | 174    | ug/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 8270   | Benzo(a)anthracene        | 3.1    | ug/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 8270   | Benzo(a)pyrene            | 2.3    | ug/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 8270   | Benzo(b)fluoranthene      | 2.4    | ug/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 8270   | Benzo(k)fluoranthene      | 2.6    | ug/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 8270   | Chrysene                  | 3      | ug/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 8270   | Pyrene                    | 8.9    | ug/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 8270   | Fluoranthene              | 9.2    | ug/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 7060   | Arsenic                   | 7.4    | mg/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 6010   | Barium                    | 180    | mg/kg |           | 2.4            | mg/L  |           |
| UPAS-TP01-0101          | 1/26/99         | 6010   | Chromium                  | 11     | mg/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 6010   | Lead                      | 450    | mg/kg |           | 2.9            | mg/L  |           |
| UPAS-TP01-0101          | 1/26/99         | 245.5  | Mercury                   | 0.134  | mg/kg |           |                |       |           |
| UPAS-TP01-0101          | 1/26/99         | 6010   | Silver                    | 4.9    | mg/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 8260   | 1,2-Dibromoethane         | 9.7    | ug/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 8260   | cis-1,2-Dichloroethene    | 526    | ug/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 8260   | Naphthalene               | 154    | ug/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 8260   | Tetrachloroethene         | 3850   | ug/kg |           | 0.25           | mg/L  |           |
| UPAS-TP01-0201          | 1/26/99         | 8260   | Toluene                   | 7.8    | ug/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 8260   | Trichloroethylene         | 207    | ug/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 8260   | Xylenes, Total            | 18.4   | ug/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 8260   | Vinyl Chloride            | 16.7   | ug/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 7060   | Arsenic                   | 3.4    | mg/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 6010   | Barium                    | 170    | mg/kg |           | 1.4            | mg/L  |           |
| UPAS-TP01-0201          | 1/26/99         | 6010   | Chromium                  | 6.2    | mg/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 6010   | Lead                      | 8.2    | mg/kg |           |                |       |           |
| UPAS-TP01-0201          | 1/26/99         | 245.5  | Mercury                   | 0.021  | mg/kg |           |                |       |           |

J = Estimated Value

**ACETYLENE SLUDGE PITS ANALYTICAL DATA  
(HITS ONLY)**

| Field Identification | Date Sampled | Method | Chemical               | Result | Units | Qualifier | TCLP Result | Units | Qualifier |
|----------------------|--------------|--------|------------------------|--------|-------|-----------|-------------|-------|-----------|
| UPAS-TP02-0101       | 1/26/99      | 8260   | Tetrachloroethene      | 1840   | ug/kg |           | 0.04        | mg/L  |           |
| UPAS-TP02-0101       | 1/26/99      | 6010   | Barium                 | 36     | mg/kg |           |             |       |           |
| UPAS-TP02-0101       | 1/26/99      | 6010   | Lead                   | 88     | mg/kg |           |             |       |           |
| UPAS-TP02-0101       | 1/26/99      | 245.5  | Mercury                | 0.567  | mg/kg |           |             |       |           |
| UPAS-TP02-0101       | 1/26/99      | 7740   | Selenium               | 1.1    | mg/kg |           |             |       |           |
| UPAS-TP02-0201       | 1/26/99      | 8260   | cis-1,2-Dichloroethene | 222    | ug/kg |           |             |       |           |
| UPAS-TP02-0201       | 1/26/99      | 8260   | Ethylbenzene           | 5.7    | ug/kg |           |             |       |           |
| UPAS-TP02-0201       | 1/26/99      | 8260   | 1,2,4-Trimethylbenzene | 5.3    | ug/kg |           |             |       |           |
| UPAS-TP02-0201       | 1/26/99      | 8260   | Tetrachloroethene      | 3950   | ug/kg |           | 0.34        | mg/L  |           |
| UPAS-TP02-0201       | 1/26/99      | 8260   | Trichloroethylene      | 821    | ug/kg |           | 0.06        | mg/L  |           |
| UPAS-TP02-0201       | 1/26/99      | 8260   | Toluene                | 15.7   | ug/kg |           |             |       |           |
| UPAS-TP02-0201       | 1/26/99      | 8260   | Xylenes, Total         | 27.5   | ug/kg |           |             |       |           |
| UPAS-TP02-0201       | 1/26/99      | 7060   | Arsenic                | 4.4    | mg/kg |           |             |       |           |
| UPAS-TP02-0201       | 1/26/99      | 6010   | Barium                 | 160    | mg/kg |           | 1.3         | mg/L  |           |
| UPAS-TP02-0201       | 1/26/99      | 6010   | Chromium               | 5.5    | mg/kg |           |             |       |           |
| UPAS-TP02-0201       | 1/26/99      | 6010   | Lead                   | 5.9    | mg/kg |           |             |       |           |

J = Estimated Value

**ACETYLENE SLUDGE PITS ANALYTICAL DATA  
(HITS ONLY)**

| Field Identification | Date Sampled | Method | Chemical                   | Result | Units | Qualifier | TCLP Result | Units | Qualifier |
|----------------------|--------------|--------|----------------------------|--------|-------|-----------|-------------|-------|-----------|
| UPAS-TP03-0101       | 1/26/99      | 8260   | cis-1,2-Dichloroethene     | 1360   | ug/kg | J         |             |       |           |
| UPAS-TP03-0101       | 1/26/99      | 8260   | Trichloroethylene          | 548    | ug/kg | J         | 0.04        | mg/L  |           |
| UPAS-TP03-0101       | 1/26/99      | 8260   | Tetrachloroethene          | 10600  | ug/kg |           | 0.19        | mg/L  | J         |
| UPAS-TP03-0101       | 1/26/99      | 8270   | Bis(2-ethylhexyl)phthalate | 7.6    | ug/kg | UJ        |             |       |           |
| UPAS-TP03-0101       | 1/26/99      | 7060   | Arsenic                    | 26     | mg/kg | J         |             |       |           |
| UPAS-TP03-0101       | 1/26/99      | 6010   | Barium                     | 180    | mg/kg |           | 1.3         | mg/L  | J         |
| UPAS-TP03-0101       | 1/26/99      | 6010   | Chromium                   | 30     | mg/kg |           |             |       |           |
| UPAS-TP03-0101       | 1/26/99      | 6010   | Lead                       | 320    | mg/kg | J         | 1.3         | mg/L  | J         |
| UPAS-TP03-0101       | 1/26/99      | 245.5  | Mercury                    | 0.603  | mg/kg |           |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8260   | cis-1,2-Dichloroethene     | 1570   | ug/kg |           |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8260   | Tetrachloroethene          | 5780   | ug/kg |           | 0.59        | mg/L  |           |
| UPAS-TP03-0201       | 1/26/99      | 8260   | Trichloroethylene          | 398    | ug/kg |           | 0.07        | mg/L  |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Anthracene                 | 2.9    | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Benzo(a)anthracene         | 14.2   | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Benzo(a)pyrene             | 15.9   | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Benzo(b)fluoranthene       | 13.8   | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Benzo(ghi)perylene         | 8.1    | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Benzo(k)fluoranthene       | 14.2   | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Chrysene                   | 14.4   | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Dibenzo(a,h)anthracene     | 3.3    | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Fluoranthene               | 17.9   | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Indeno(1,2,3-cd)pyrene     | 8.3    | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Phenanthrene               | 9.7    | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 8270   | Pyrene                     | 17.3   | ug/kg | J         |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 7060   | Arsenic                    | 7      | mg/kg |           |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 6010   | Barium                     | 2300   | mg/kg |           | 1           | mg/L  |           |
| UPAS-TP03-0201       | 1/26/99      | 6010   | Cadmium                    | 36     | mg/kg |           |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 6010   | Chromium                   | 190    | mg/kg |           |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 6010   | Lead                       | 3400   | mg/kg |           |             |       |           |
| UPAS-TP03-0201       | 1/26/99      | 245.5  | Mercury                    | 0.408  | mg/kg |           |             |       |           |

J = Estimated Value

**ACETYLENE SLUDGE PITS ANALYTICAL DATA  
(HITS ONLY)**

| Field Identification | Date Sampled | Method | Chemical                 | Result  | Units | Qualifier | TCLP Result | Units | Qualifier |
|----------------------|--------------|--------|--------------------------|---------|-------|-----------|-------------|-------|-----------|
| UPAS-TP04-0101       | 1/26/99      | 8260   | 1,2-Dichlorobenzene      | 378     | ug/kg |           |             |       |           |
| UPAS-TP04-0101       | 1/26/99      | 8260   | Ethylbenzene             | 6990    | ug/kg |           |             |       |           |
| UPAS-TP04-0101       | 1/26/99      | 8260   | Tetrachloroethene        | 1450000 | ug/kg |           | 22.6        | mg/L  |           |
| UPAS-TP04-0101       | 1/26/99      | 8260   | 1,2,4-Trimethylbenzene   | 396     | ug/kg |           |             |       |           |
| UPAS-TP04-0101       | 1/26/99      | 8260   | Trichloroethylene        | 440     | ug/kg | J         | 0.03        | mg/L  |           |
| UPAS-TP04-0101       | 1/26/99      | 8260   | Xylenes, Total           | 39900   | ug/kg |           |             |       |           |
| UPAS-TP04-0101       | 1/26/99      | 8270   | 1,2-Dichlorobenzene      | 1.2     | ug/g  |           |             |       |           |
| UPAS-TP04-0101       | 1/26/99      | 8270   | Phenanthrene             | 0.72    | ug/g  |           |             |       |           |
| UPAS-TP04-0101       | 1/26/99      | 8082   | PCB-1260                 | 0.31    | ug/g  | J         |             |       |           |
| UPAS-TP04-0101       | 1/26/99      | 6010   | Lead                     | 38      | mg/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 8260   | cis-1,2-Dichloroethene   | 89.1    | ug/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 8260   | trans-1,2-Dichloroethene | 33.3    | ug/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 8260   | Ethylbenzene             | 202     | ug/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 8260   | Toluene                  | 14.6    | ug/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 8260   | 1,2,4-Trimethylbenzene   | 11.3    | ug/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 8260   | Vinyl Chloride           | 311     | ug/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 8260   | Xylenes, Total           | 1200    | ug/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 7060   | Arsenic                  | 1.8     | mg/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 6010   | Barium                   | 220     | mg/kg |           | 1.2         | mg/L  |           |
| UPAS-TP04-0201       | 1/26/99      | 6010   | Chromium                 | 6.1     | mg/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 6010   | Lead                     | 6.3     | mg/kg |           |             |       |           |
| UPAS-TP04-0201       | 1/26/99      | 245.5  | Mercury                  | 0.026   | mg/kg |           |             |       |           |

J = Estimated Value

**ACETYLENE SLUDGE PITS ANALYTICAL DATA  
(HITS ONLY)**

| Field Identification | Date Sampled | Method | Chemical                 | Result  | Units | Qualifier | TCLP Result | Units | Qualifier |
|----------------------|--------------|--------|--------------------------|---------|-------|-----------|-------------|-------|-----------|
| UPAS-TP05-0101       | 1/26/99      | 8260   | 1,2-Dichlorobenzene      | 1190    | ug/kg |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8260   | cis-1,2-Dichloroethene   | 564     | ug/kg |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8260   | Ethylbenzene             | 2900    | ug/kg |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8260   | Tetrachloroethene        | 1020000 | ug/kg |           | 75.5        | mg/L  |           |
| UPAS-TP05-0101       | 1/26/99      | 8260   | Trichloroethylene        | 1350    | ug/kg | J         | 0.09        | mg/L  |           |
| UPAS-TP05-0101       | 1/26/99      | 8260   | 1,2,4-Trimethylbenzene   | 253     | ug/kg |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8260   | Xylenes, Total           | 15500   | ug/kg |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | Anthracene               | 0.66    | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | Benzo(a)anthracene       | 1.7     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | Benzo(a)pyrene           | 1.5     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | Benzo(b)fluoranthene     | 1.5     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | Benzo(k)fluoranthene     | 1.3     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | Chrysene                 | 1.7     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | 1,2-Dichlorobenzene      | 5.4     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | Fluoranthene             | 4.6     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | 2-Methylnaphthalene      | 1.2     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | Phenanthrene             | 3.7     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 8270   | Pyrene                   | 4.2     | ug/g  |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 7060   | Arsenic                  | 1.5     | mg/kg |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 6010   | Barium                   | 60      | mg/kg |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 6010   | Lead                     | 180     | mg/kg |           |             |       |           |
| UPAS-TP05-0101       | 1/26/99      | 245.5  | Mercury                  | 0.045   | mg/kg |           |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 8260   | Benzene                  | 9.7     | ug/kg | J         |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 8260   | 1,1-Dichloroethene       | 8.1     | ug/kg | J         |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 8260   | cis-1,2-Dichloroethene   | 2770    | ug/kg | J         |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 8260   | trans-1,2-Dichloroethene | 130     | ug/kg | J         |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 8260   | Ethylbenzene             | 15.2    | ug/kg | J         |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 8260   | Tetrachloroethene        | 2440    | ug/kg | J         | 0.86        | mg/L  |           |
| UPAS-TP05-0201       | 1/26/99      | 8260   | Toluene                  | 8.1     | ug/kg | J         |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 8260   | Trichloroethylene        | 12.7    | ug/kg | J         |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 8260   | Vinyl Chloride           | 266     | ug/kg | J         |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 7060   | Arsenic                  | 5       | mg/kg |           |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 6010   | Barium                   | 180     | mg/kg |           | 1.2         | mg/L  |           |
| UPAS-TP05-0201       | 1/26/99      | 6010   | Chromium                 | 7.8     | mg/kg |           |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 6010   | Lead                     | 8       | mg/kg |           |             |       |           |
| UPAS-TP05-0201       | 1/26/99      | 245.5  | Mercury                  | 0.025   | mg/kg |           |             |       |           |

J = Estimated Value

**ACETYLENE SLUDGE PITS ANALYTICAL DATA  
(HITS ONLY)**

| Field Identification | Date Sampled | Method | Chemical                 | Result  | Units | Qualifier | TCLP Result | Units | Qualifier |
|----------------------|--------------|--------|--------------------------|---------|-------|-----------|-------------|-------|-----------|
| UPAS-TP06-0101       | 1/26/99      | 8260   | 4-Bromomfluorobenzene    | 99.6    | ug/kg |           |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 8260   | Dibromofluoromethane     | 95.3    | ug/kg |           |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 8260   | 1,2-Dichlorobenzene      | 24000   | ug/kg |           |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 8260   | Ethylbenzene             | 119000  | ug/kg |           |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 8260   | Tetrachloroethene        | 5550000 | ug/kg |           | 27.3        | mg/L  |           |
| UPAS-TP06-0101       | 1/26/99      | 8260   | Toluene-d8               | 101     | ug/kg |           |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 8260   | 1,1,1-Trichloroethane    | 26600   | ug/kg |           |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 8260   | Xylenes, Total           | 634000  | ug/kg |           |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 8270   | 2-Methylnaphthalene      | 4.1     | ug/g  | J         |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 8270   | Phenanthrene             | 5.6     | ug/g  | J         |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 8082   | PCB-1260                 | 0.062   | ug/g  | J         |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 7060   | Arsenic                  | 2.1     | mg/kg |           |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 6010   | Barium                   | 17      | mg/kg |           | 0.23        | mg/L  |           |
| UPAS-TP06-0101       | 1/26/99      | 6010   | Lead                     | 160     | mg/kg |           |             |       |           |
| UPAS-TP06-0101       | 1/26/99      | 245.5  | Mercury                  | 0.033   | mg/kg |           |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 8260   | cis-1,2-Dichloroethene   | 10900   | ug/kg |           |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 8260   | trans-1,2-Dichloroethene | 227     | ug/kg |           |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 8260   | Tetrachloroethene        | 18200   | ug/kg |           | 3           | mg/L  |           |
| UPAS-TP06-0201       | 1/26/99      | 8260   | Trichloroethylene        | 251     | ug/kg |           | 0.03        | mg/L  |           |
| UPAS-TP06-0201       | 1/26/99      | 8260   | Vinyl Chloride           | 819     | ug/kg |           |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 8270   | 1,2-Dichlorobenzene      | 1.2     | ug/g  | J         |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 8270   | Fluoranthene             | 1.2     | ug/g  | J         |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 8270   | Phenanthrene             | 1.2     | ug/g  | J         |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 8270   | Pyrene                   | 0.97    | ug/g  | J         |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 7060   | Arsenic                  | 7.1     | mg/kg |           |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 6010   | Barium                   | 180     | mg/kg |           | 1.3         | mg/L  |           |
| UPAS-TP06-0201       | 1/26/99      | 6010   | Cadmium                  | 1.1     | mg/kg |           |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 6010   | Chromium                 | 10      | mg/kg |           |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 6010   | Lead                     | 120     | mg/kg |           |             |       |           |
| UPAS-TP06-0201       | 1/26/99      | 245.5  | Mercury                  | 0.102   | mg/kg |           |             |       |           |

J = Estimated Value



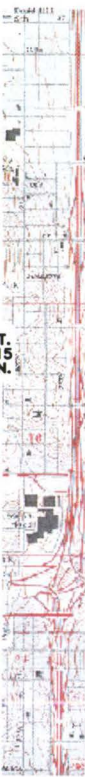
# UNION PACIFIC RAILROAD COMPANY

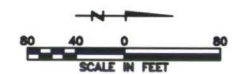
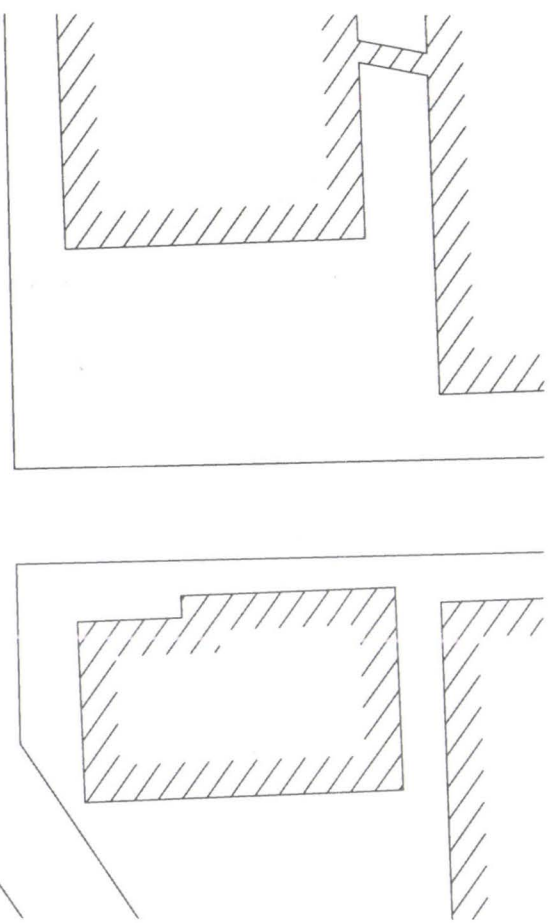
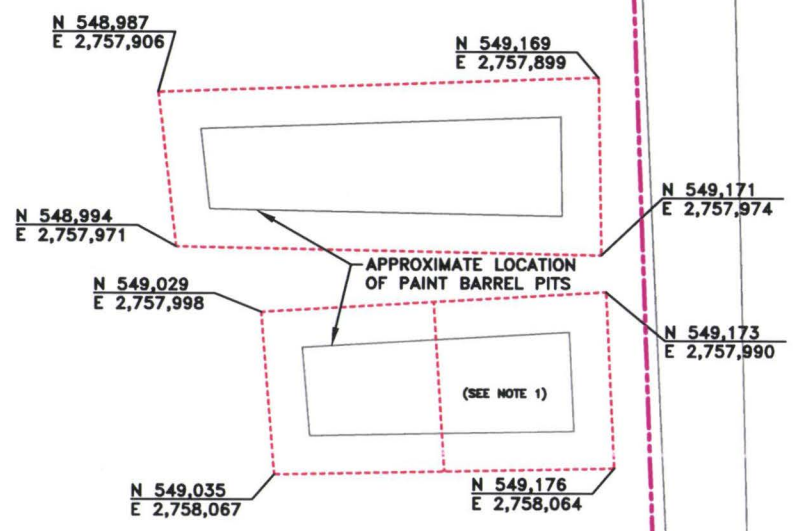
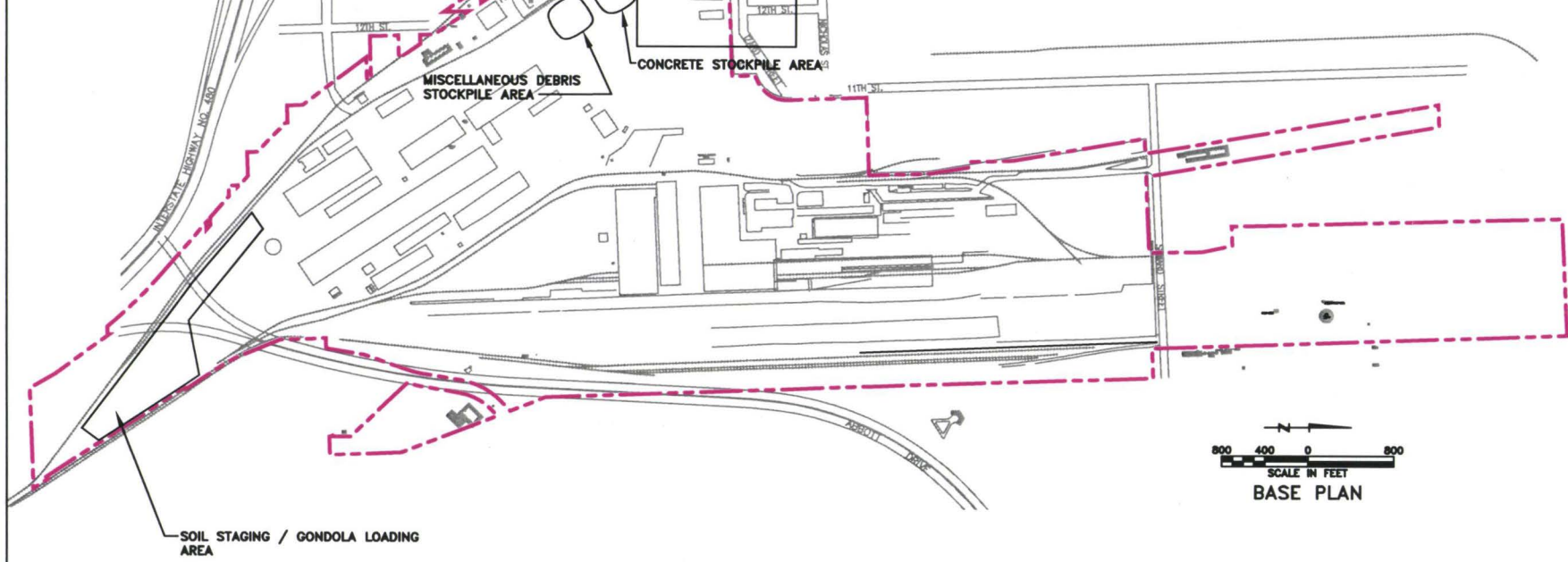
## CORRECTIVE MEASURES IMPLEMENTATION AND INTERIM ACTION REMOVALS OMAHA SHOPS FACILITY OMAHA, NEBRASKA

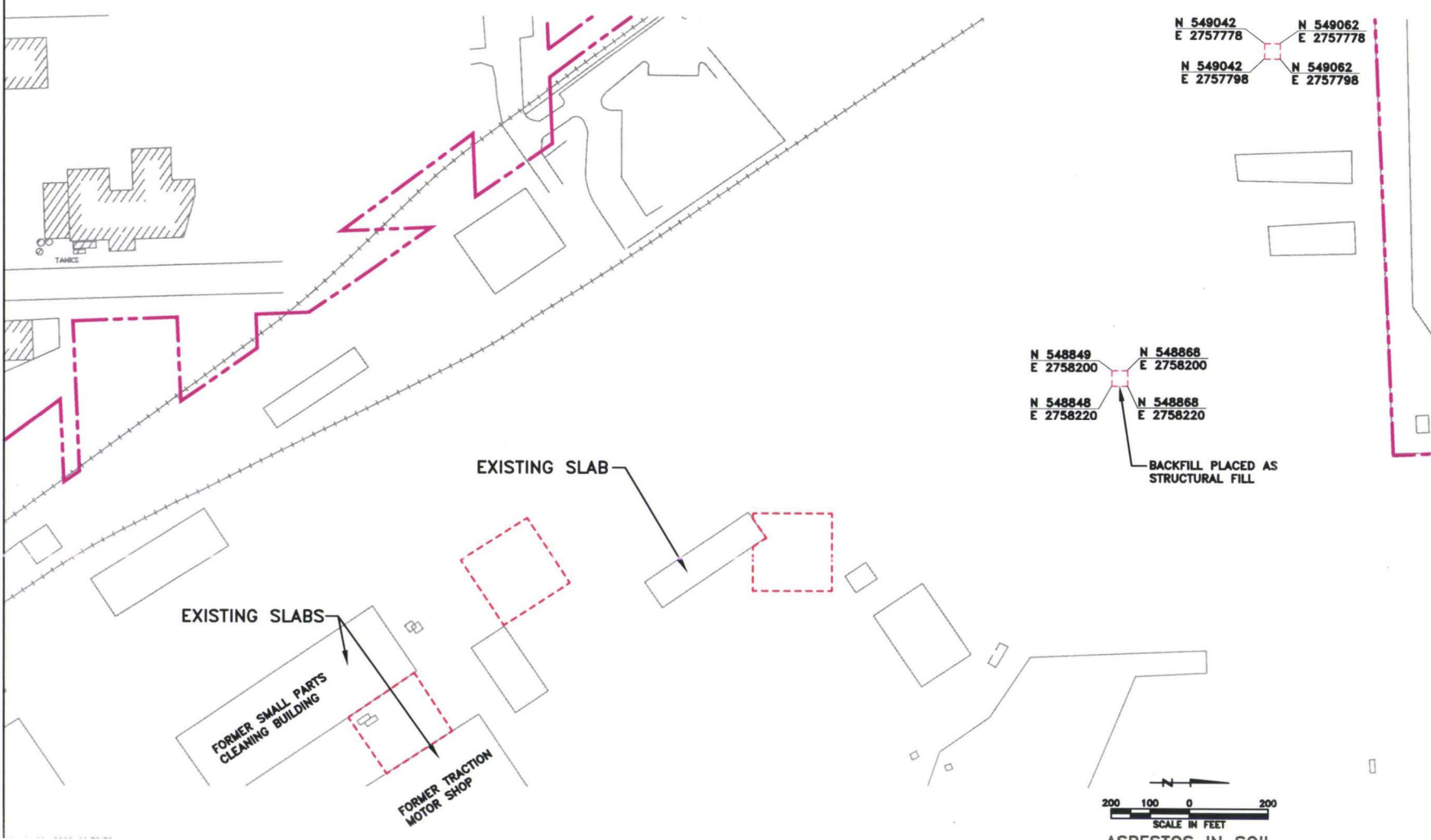
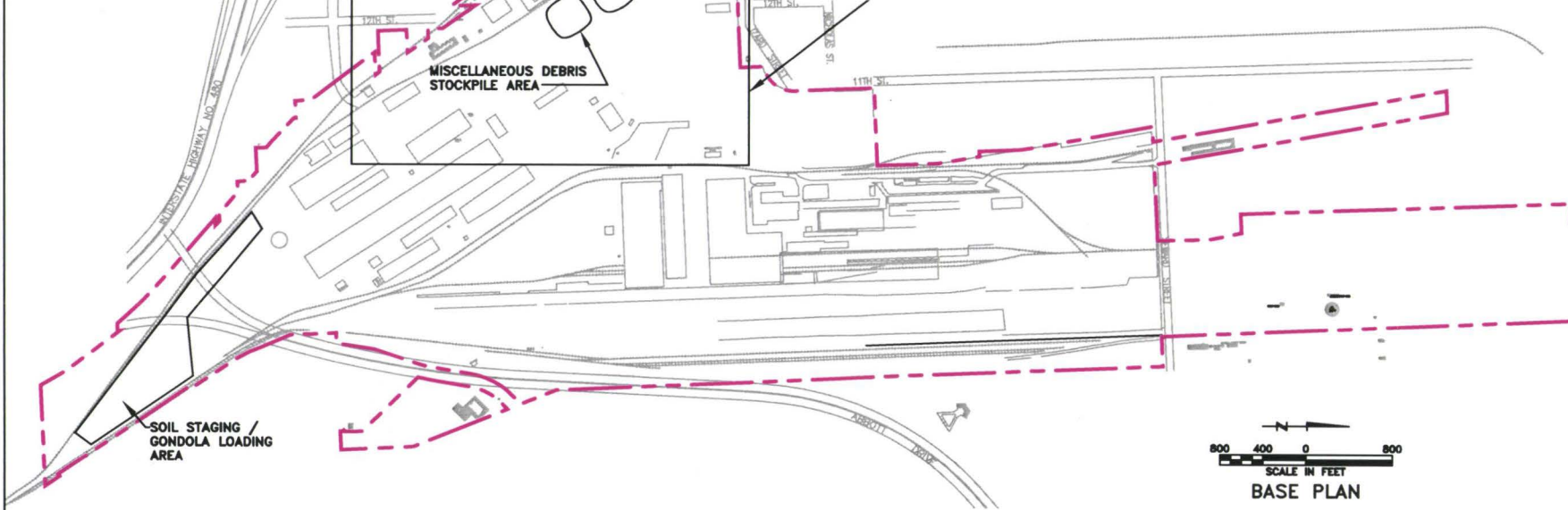
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RCRA I.D. NO. NED000829754

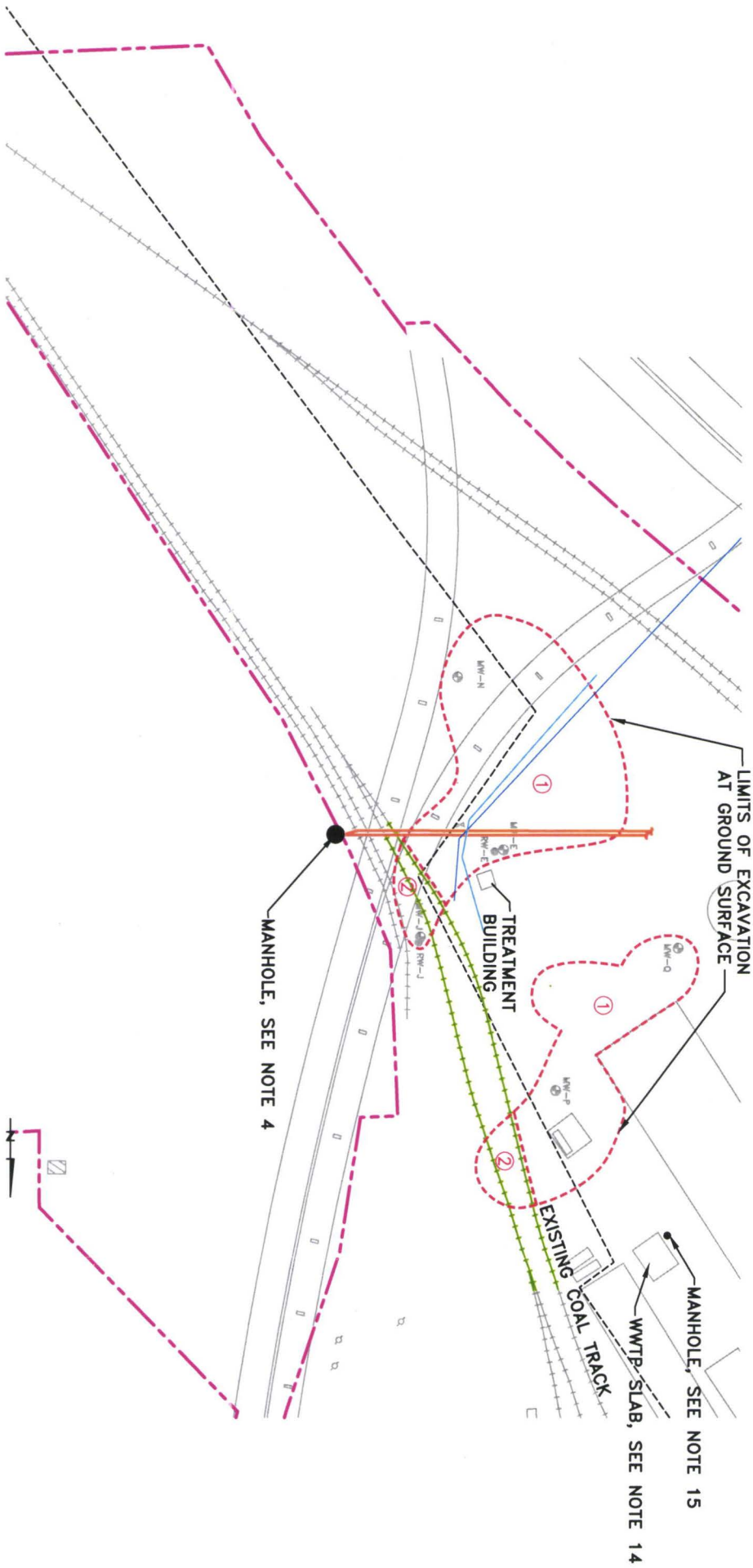
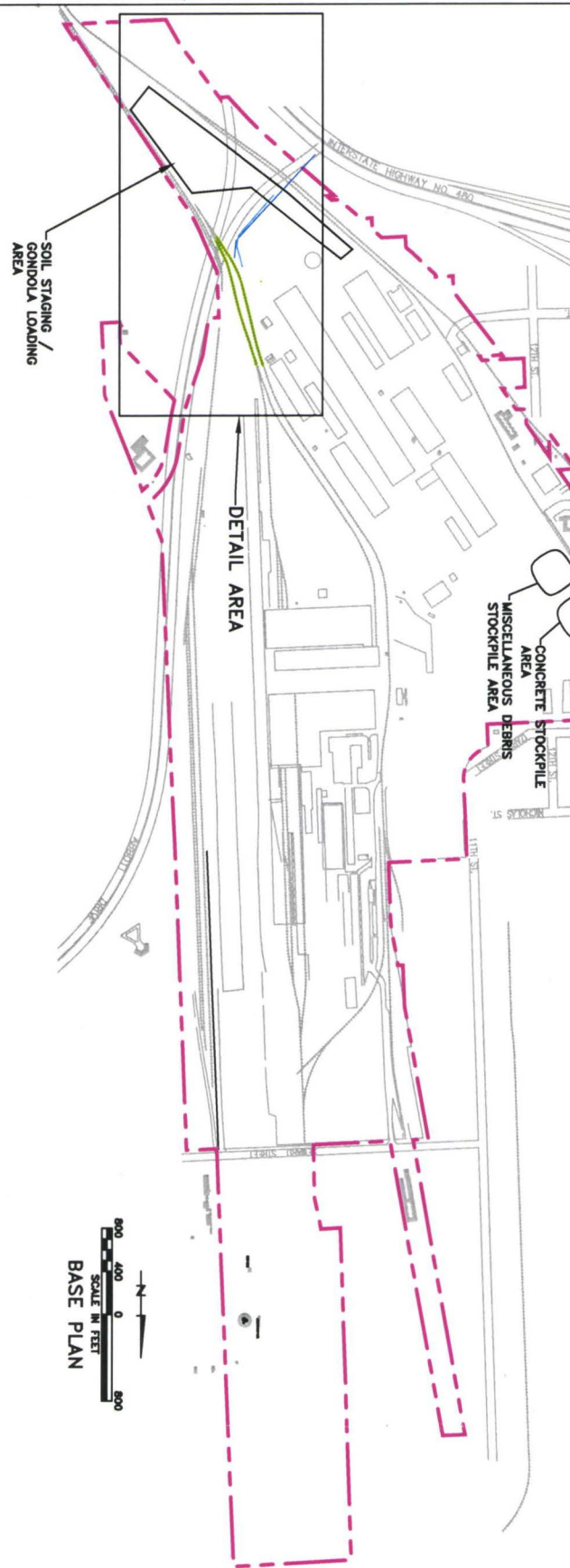
PREPARED BY

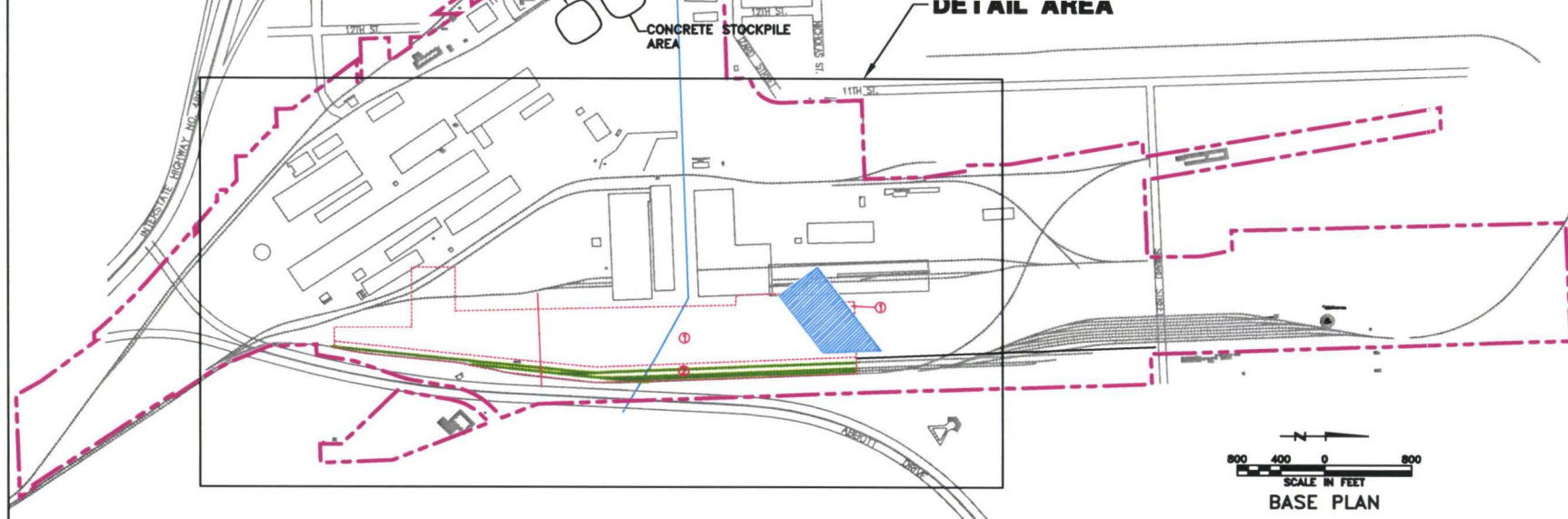
***URS Greiner Woodward Clyde***









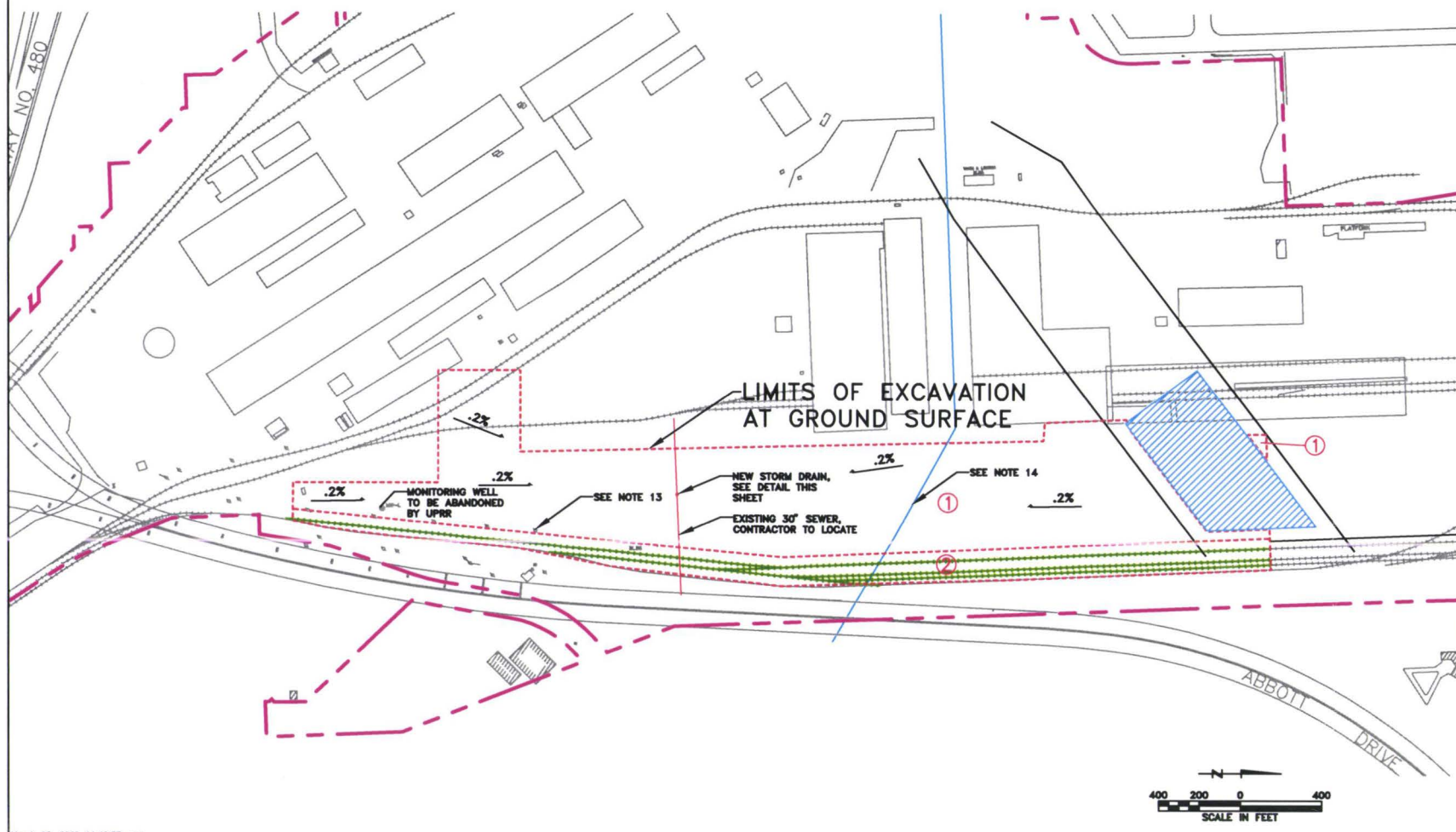


## LEGEND

- LEAD CONTAMINATED SOIL
- ① SOIL TO BE REMOVED IN FA
- ② SOIL TO BE REMOVED IN SP
- TRACK TO BE REMOVED IN
- TOE OF NEW CUMING ST /
- 16" METROPOLITAN UTILITIES

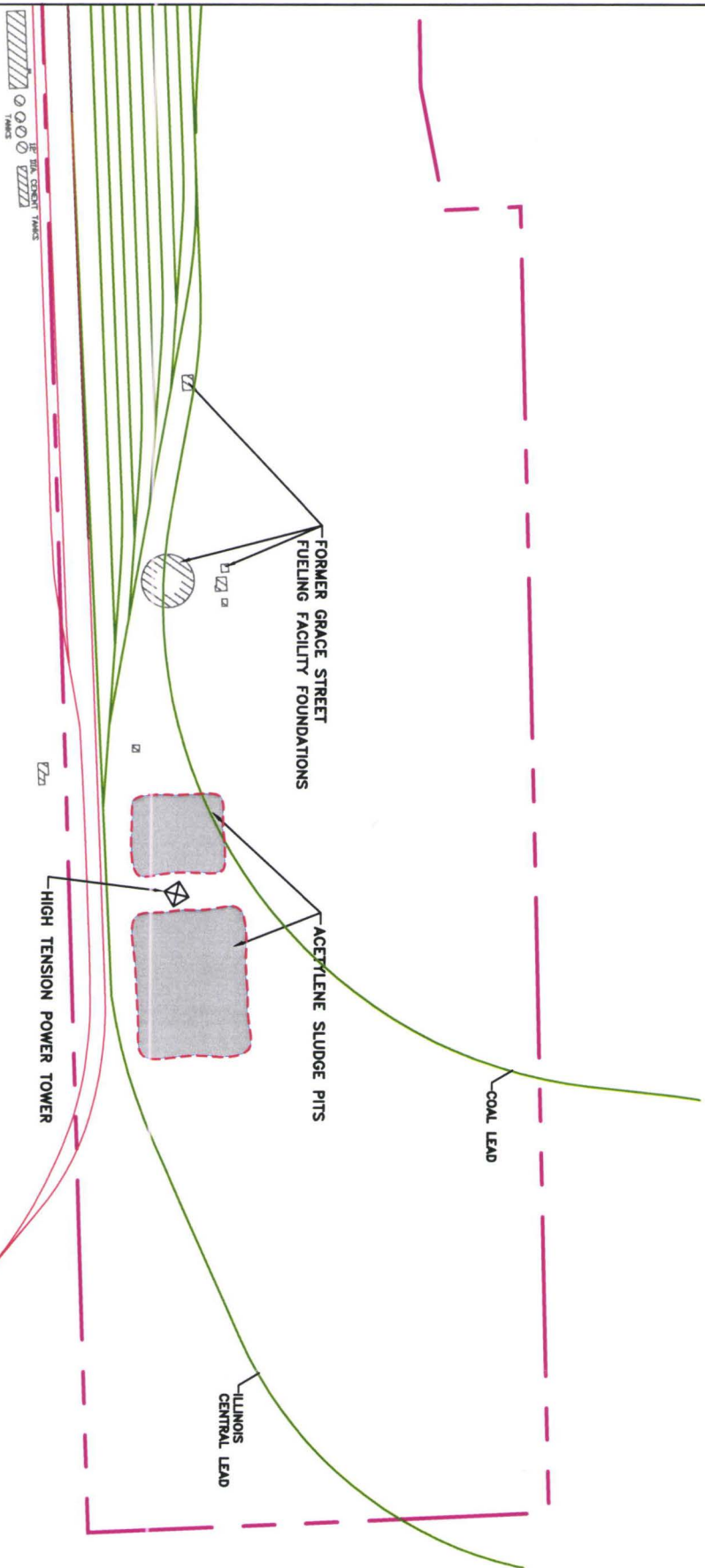
## NOTES

1. LEAD AREA EXCAVATION SHALL BE 02260, LEAD HAZARD ABATEMENT AND RESTORATION.
2. EXCAVATE TO A DEPTH OF ONE FOOT OR DEEPER IF NECESSARY PENDING FINAL LOCATION OF CONTAMINATION. DEEP EXCAVATIONS SHALL BE APPROVED BY THE ENGINEER.
3. THE CONTRACTOR SHALL STRIP OFF TOPSOIL STOCKPILE AREA WILL BE DETERMINED BY THE ENGINEER.
4. EXCAVATED LEAD CONTAMINATED SOIL SHALL BE SPECIFICATION 02200.
5. THE ENGINEER WILL DIRECT ADDITIONAL WORK.
6. GEOTECHNICAL MONITORING EQUIPMENT SHALL BE INSTALLED.
7. TWO SHEETS OF HIGH-STRENGTH GEOTEXTILE SHALL BE PLACED ON ONE LIFT OF FILL MATERIAL. THE DIRECTION OF THE WARP DIRECTION PARALLEL TO THE CENTERLINE.
8. THE GEOTEXTILE DELIVERED TO THE SITE SHALL BE IN ELEMENTS UNTIL INSTALLATION.
9. THE GEOTEXTILE SHEETS SHALL BE RESTORED LEAVING ROLLS OF AT LEAST 10 FEET LONG WITH BLACK PLASTIC, MARKED, AND DATED.
10. AT LEAST 75 PERCENT OF THE SHEETS SHALL BE ALLOWED IN 25 PERCENT OF THE SHEETS INSTALLED IN ADJACENT POSITIONS.
11. DO NOT ALLOW CONSTRUCTION EQUIPMENT OFF THE EXCAVATION.
12. FILL PLACEMENT TO BRING ROAD TO EXISTING GRADE.
13. ALL OVERHEAD POWER/COMMUNICATIONS SHALL BE LOCATED AND EQUIPMENT TRAVEL AND EXCAVATION SHALL BE AVOIDED.
15. THE 1-FOOT EXCAVATION WILL NOT BE REQUIRED.



EXISTING GRADE

TOE OF FINAL  
TOE OF NEW CUMING



**Request for Bid**  
**Union Pacific Railroad Company**  
**Omaha Shops – 9<sup>th</sup> and Cass Streets**  
**Omaha, Nebraska**



Union Pacific Railroad Company (UPRR) invites you to submit a bid for environmental construction services required in the rail yard of the Union Pacific Railroad Company at 9<sup>th</sup> and Cass Streets in Omaha, Nebraska. The Contractor shall review this Request for Bid and attached specifications for information on the complete scope of work. This work is being completed under an Administrative Order on Consent (Order) with the United States Environmental Protection Agency (EPA) and a Stipulation for Entry of Schedule of Compliance (Stipulation) with the Nebraska Department of Environmental Quality (NDEQ). The project is also being completed under the Remedial Action Plan Monitoring Act (RAPMA) which is administered by NDEQ. The Railroad's environmental services contract engineer, URS, will provide remediation oversight on behalf of the Railroad.

**Project Background**

The Omaha Shops (Site) is comprised of property owned by the Union Pacific Railroad. The Site occupies approximately 184 acres in the eastern portion of Omaha, Nebraska, just north of downtown. Historically, the yard has been used for locomotive and railcar maintenance, railcar switching, equipment storage, and locomotive fueling and servicing. In 1988 most of the operations were moved to different locations on the railroad. Business railcar maintenance and storage occur on the site. In addition, tracks are used for train traffic and car switching.

The site has been the subject of several investigations since 1985. The investigations included asbestos surveys, hydrocarbon contamination investigations, site assessments, and site investigations. As a result of the various investigations, both prior to entering into the Order and the Stipulation and following, the Railroad has developed plans to remediate various contaminants and areas of contamination at the Omaha Shops. Five areas of work have been identified and specific scopes of work have been developed. The areas of work are: petroleum contamination in the southern portion of the Site; contaminated soil in the former Paint Barrel Pits; asbestos contamination in soil in the western portion of the Site; lead contaminated soil in the Eighth Street Yard in the eastern portion of the Site; and contaminated soil in the former Acetylene Sludge Pits.

**Definition of Terms**

Whenever in these Specifications the following terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

1. Railroad – Shall mean Union Pacific Railroad Company.
2. Agreement – The written agreement and any written supplements or amendments thereto covering the performance of the Work and the furnishing of all superintendence, labor, tools, equipment, material, supplies and all other things required to properly complete the Work.
3. Contractor – The person or persons, firm, partnership, corporation, or combination thereof, who have entered into the Agreement with the Railroad.
4. Drawings – The official project plans, profiles, typical cross sections, general cross sections, working drawings and supplemental drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions, and details of the Work to be performed.
5. Engineer – The Vice President Engineering of the Railroad or his authorized representative.

6. Right of Way – Land which the Railroad owns or owns an interest in sufficient to permit performance of the Work.
7. Specifications – The directions, provisions, and requirements contained therein.
8. Project – The total construction of which the Work performed under the Contract Document may be the whole or a part and which may include construction by the Railroad or by separate contractors.
9. Work – The carrying out of responsibilities and duties imposed by the Agreement, whether completed or partially completed, and includes all labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations.

#### **Scope of Work**

The goal of this project is to complete environmental remediation of the Site per the approved plans by the EPA and NDEQ. The specific scope of work is contained in additional sections of these documents. The project contains five areas of work. It is anticipated all areas of work will be incorporated into one contract, however, the Railroad reserves the right to exclude any area of work it deems necessary. The areas of work are:

1. Petroleum Contaminated Soil (PCS) area is located at the southern portion of the Site. Soil will be excavated from two areas and placed into either a contaminated stockpile or an uncontaminated stockpile. Contaminated soil will be shipped off site in gondola cars to a disposal facility. Uncontaminated soil will be returned to the excavation. The excavations are to remain open for a minimum of four weeks to allow free product to accumulate and be removed. Upon completion of the work, the excavations are to be backfilled and compacted.
2. The Paint Barrel Pits are located in the western portion of the Site. The soil in the Paint Barrel Pits will be excavated and segregated into two stockpiles. The first stockpile will be located in the soil staging area for disposal at an offsite facility. The second stockpile will be located adjacent to the pit. If the soil adjacent to the pit fails TCLP, then the material will be treated on site and transported to the soil staging area. If the material passes TCLP, then the material will be transported to the soil staging area. All material will be loaded into gondola cars for transport.
3. The Asbestos Area consists of removing surface and near surface soil which contains asbestos. This soil will be excavated and disposed by the Contractor at a local landfill. Excavations will be backfilled by the Contractor.
4. The Lead Area contains lead-contaminated soil which will be excavated to a depth of one foot and placed in a road embankment on the Site. In some locations, the need may arise to excavate deeper than one foot. The soil will be placed on a geotextile fabric and compacted. The lead-contaminated soil will be covered with clean soil. The excavated area will not be backfilled.
5. The Acetylene Sludge Pits soil will be excavated and disposed off site. The soil will be a hazardous waste and will be loaded into gondola cars or disposal boxes. The pits will be graded.

Unless specified otherwise, all materials shall be furnished by the Contractor and the material shall be new. The Contractor shall be responsible for all materials and equipment in its custody or placed in construction by it.

#### **Project Schedule**

Bidders shall provide a detailed work schedule with their bid. The successful bidder should plan to begin work immediately upon completion of the agreement between the Union Pacific and the Contractor. Railroad gondola

cars, if used in this project, shall immediately be loaded as excavation and testing activities allow and released for transit thereafter.

Time is of the essence. The remediation of the Site is an initial step in the process of the redevelopment of the Site. The remediation contemplated in this contract is on the critical path for the redevelopment to be successful. Therefore, all remediation work shall be completed by September 1, 2000, except that a second phase of the lead contaminated soil removal in the eastern portion of the Site will not be completed until railroad track over this specific area has been removed. The track shall be removed about March 2001. The second phase of the lead contaminated soil removal will commence immediately after track removal.

Critical time elements exist for this project. Certain aspects of the work must begin immediately upon notice to proceed in order for all the remedial work to be completed on time. Essentially, the five areas of work will be undertaken simultaneously and not in a progressive fashion. Some selected, but not all, time-critical items are as follows:

1. The petroleum contaminated soil (PCS) area must be excavated immediately in order to allow for the excavation to remain open to collect free product for at least four weeks. In addition, a restricted number of railroad gondola cars will be available to transport the PCS off site to the disposal facility. The cars must be cycled between the disposal facility and the Site in order to transport the entire amount of PCS. The PCS will be excavated in two phases. The second phase is anticipated to begin about August 15, 2000, after the overlying track is removed.
2. The Paint Barrel Pits must be excavated early in the project in order to allow for treatment of a portion of the soil, if necessary. In addition, the soil from the Paint Barrel Pits will be transported to the same disposal facility as the PCS and therefore must be ready for shipment at the same time as the PCS.
3. The Asbestos Area must be completed as early as possible so as to avoid conflict with City of Omaha contractors who may be working near the Asbestos Area.
4. The Lead Area must be completed as soon as possible to allow sufficient time for confirmation samples to be collected and analyzed so a determination can be made on additional excavation, if necessary. Phase 1 of the Lead Area work must be completed by September 1, 2000.
5. The soil from the Acetylene Sludge Pits must be removed from the pits and backfill placed by July 10, 2000, to allow for new track grading and construction to occur over this area. All soil from the Acetylene Sludge Pits must be removed from the Site by September 1, 2000.

The Contractor shall allow the Railroad to take possession of and use any completed or partially completed portions of the facility during the progress of the Work as is possible without interfering with the progress of the Contractor. Possession and use of the facility shall not in any way evidence the completion of the Work or signify the Railroad's acceptance of the work or any part of it.

#### **Area of Work**

Work shall be performed on UPRR property. Any work on UPRR property performed within 25 feet of the outside edge of track must be coordinated with the local UPRR Manager Track Maintenance who will determine safety requirements. Every effort should be made to stay further than 25 feet from the outside edge of track, however, because of the nature of the work contemplated in this project, work within 25 feet of track is anticipated. All activity must be conducted in such a manner that it minimizes interference with Railroad operations. The Contractor must use caution when crossing any railroad track.

The Contractor and all subcontractors shall not use private roads in and around the site unless permission is

specifically granted by the landowner. The Contractor shall provide a copy of all such agreements with adjacent landowners to the Railroad. Access to the Site shall be limited to as few entrances as possible.

The Contractor is advised that representatives of the City of Omaha, EPA, and NDEQ may be present at the site during the course of the project and have full access to witness all portions of the work. All such representatives will be required to adhere to all safety requirements of the project and the Railroad.

#### **Performance/Confidentiality**

The successful bidder will work closely with UPRR and URS. All work produced shall be kept confidential until disclosure is authorized by UPRR.

#### **Health and Safety Guidelines**

All contractors working at the site are required to have a written health and safety plan. At a minimum, this project will require the following specific tasks:

- Workers trained and certified to meet the 40-hour training requirements of the Occupational Health and Safety Administration (OSHA) CFR 29 Part 1910.120, including 8-hour updates.
- Documented safety meetings prior to the start of each day's activities.

General Contractor and all subcontractors shall attend all safety meetings. Contractor will shut down or clear equipment within 25 feet of track when trains are approaching as advised by Railroad. If a flagman is warranted, notice must be given 48 hours prior to the need to the Railroad. Contractor's equipment must be equipped with radios for communications with flagmen if flagmen are required. Contractor is responsible for all equipment movements across public and private crossings.

Fuel tanks cannot be stored closer than 50 feet to any track.

#### **Guarantees, Warranties, and Bonds**

The Contractor shall guarantee all Work under this Agreement for a period of one year from the date of acceptance by the Railroad, unless otherwise indicated. Contractor shall leave the Work in perfect order at completion, and the final certificate of payment shall not relieve him of the responsibility for negligence, faulty materials, or workmanship; upon written notice, he shall remedy any defects or workmanship that may appear during the time hereinbefore mentioned and pay all expenses due therefrom to the entire satisfaction of the Engineer.

#### **Storm Water Pollution Prevention Plan**

The Contractor shall be responsible for preparing and complying with the requirements of a Storm Water Pollution Prevention Plan (SWPPP) and sedimentation control as required by federal, state, and local agencies. The Contractor shall use best management practices to ensure that a proper plan is developed and followed. This plan shall be implemented prior to start of any earthwork activities. The Contractor shall be responsible for maintaining the SWPPP for the duration of the project. All permits shall be applied for and obtained by the Contractor. The City of Omaha is the lead agency for issuing the permits. Sample SWPPP permit forms are included with these specifications.

#### **Permits**

The Contractor is responsible for obtaining and paying for all permits for the project.

## **Utilities**

It is the Contractor's responsibility to locate and protect all utilities within the limits of construction. All utility poles located near the construction area shall be protected. Please note that fiber optic cable systems may be buried on Union Pacific Railroad property near or within the limits of this project. The Contractor shall notify the Union Pacific Railroad fiber optics hotline prior to starting any work at (800) 336-9193.

Any utilities or arrangements for utilities, such as water, electricity, telephone, and toilets, shall be made by the Contractor and paid by the Contractor for all aspects of the work. The cost for such utilities or connections shall be paid by the Contractor. However, the cost for wastewater from the PCS excavation dewatering discharged into the City of Omaha sanitary sewer shall be paid by the Railroad. The quantity of wastewater must be metered.

## **Project Team**

Each bidder shall identify the project manager, along with the other members of the Contractor's project team, including subcontractors. Provide for each team member a statement of their qualifications and experience on similar projects. The Contractor shall maintain at all times at the Site during the project a competent resident general superintendent.

## **Statement of Project Understanding**

Each bid must include a section titled "Statement of Project Understanding." This section is limited to one page, and must include: 1) a statement that the Contractor has reviewed the bidding instructions and project information, and 2) a statement that the bidder is qualified to work on this project, and understands and meets all of the requirements of UPRR as stated in the RFB.

By submitting this bid, each Contractor certifies that he and all subcontractors are or will be, prior to starting work, licensed to legally perform contract work in Nebraska. The Contractor shall be responsible to assure compliance with State laws with regard to all subcontractors used on the project.

## **Selection Criteria**

UPRR will award the contract based on cost, qualifications and experience, and schedule availability. Bids will be evaluated based on the bidder's qualifications and ability to complete the project in a timely manner. Costs will be evaluated based on the proposed unit rates for each project task. The successful bidder will be required to complete the tasks to the satisfaction of UPRR within the proposed time and costs. No change orders will be allowed for tasks that stay within the proposed scope of work. An increase or a decrease in the quantity of an item of work does not constitute a change in scope.

Each bidder may propose an alternate to the Railroad for disposal of petroleum-contaminated soil and Paint Barrel Pit soil. Instead of the Railroad disposing of the material at a facility off site which utilizes gondola cars, the bidder may propose some other means to dispose of the material off site through the efforts of the Contractor. An alternate proposal must include a description of the method and the location of disposal. An alternate price must be stated in a unit price per ton of material that is transported and disposed. The unit price must be all inclusive with no future add on costs.

## **Pre-Bid Site Visit**

A pre-bid site visit shall begin at 9:00 AM on Tuesday, April 18, 2000. The visit shall convene in the former Superintendent's Building at 9<sup>th</sup> and Webster Streets in Omaha, Nebraska at the western entrance to the Site. Questions should be submitted in advance in writing to Jeffrey D. McDermott by electronic mail to JMCDERMO@notes.up.com; by facsimile to (402) 271-4461; or by regular mail to Union Pacific Railroad

Company, 1416 Dodge Street, Room 930, Omaha, Nebraska. The questions will be summarized and the answers provided to all bidders.

### **Invoices**

All invoices shall be submitted to Jeff McDermott, Union Pacific Railroad Company, 1416 Dodge Street, Room 930, Omaha, NE 68179. A duplicate invoice shall be sent concurrently to Jeff Smith, URS, 101 South 108 Avenue, Omaha, NE 68154. Contractor shall not include change orders in invoices until they are fully executed by the Railroad. A revised schedule shall be provided with each invoice.

### **Bid Document Organization**

Please organize your bid document in the following manner:

- Statement of project understanding
- Scope of work including a task for Health and Safety Guidelines
- Proposed cost per task, including level of effort and assumptions used
- Project schedule
- Project team
- Appendix A: Service Item Bid Forms
- Appendix B: Statement of Business and Legal Relationships

### **Attachments for Bidders**

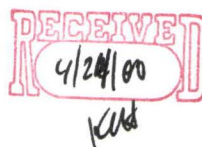
The following documents are provided to bidders.

1. Written Specifications (Sections 01130, 01300, 02200, 02250, 02260, and 02270)
2. Project Drawings (6 sheets)
3. Sample SWPPP forms (18 pages)

END

# CITY OF OMAHA

Public Works Department (PWD)  
Design Division



| INTEROFFICE USE ONLYS |        |
|-----------------------|--------|
| Project #             | File # |

## GRADING PERMIT PROCEDURES FORM (GPPF)

| SITE INFORMATION | APPLICANT              |
|------------------|------------------------|
| Project Name     | Business Name          |
| Street Address   | Project Representative |

## PROCEDURES

- These procedures are to be followed for any construction site that will have five or more acres of land disturbed by grading (reference Sections 43-264 through 43-268 of the Omaha Municipal Code).
- The applicant's engineer shall prepare a Grading and Storm Water Pollution Prevention Plan (SWPPP) according to the following requirements:
  - All proposed SWPPP's must meet the *City of Omaha Sedimentation and Soil Erosion Control Manual* requirements. Furthermore, all proposed SWPPP's constructed within any of the three major lake watershed's must meet the *City of Omaha Best Management Practices for Construction Sites: Cunningham, Standing Bear, and Zorinsky Lake Watersheds*.
  - Where possible new storm sewer outlet designs must be filtered through a sedimentation and erosion control pond before exiting the construction site. Where it is not feasible to filter storm sewer outlet through sedimentation and erosion control ponds other equivalent measures must be taken to protect the sites storm water discharge points.
  - If the applicant wishes to phase the grading it should be clearly shown and explained in detail on the SWPPP.
- The applicant's engineer shall submit the following City of Omaha Grading Permit (COGP) documents to the Permits and Inspections Division for review:
  - A permitting fee in the amount of \$500.00 for a site less than 10 acres or \$1000.00 for a site greater than 10 acres.
  - One Grading Permit Application Form (GPAF).
  - One National Pollutant Discharge Elimination System (NPDES) Permit Forms CSW-NOI.
  - Five duplicate sets of plans on 24" X 36" paper containing the details of the proposed SWPPP.
  - One Grading Permitting Procedures Form (GPPF).All documents submitted to the City shall be signed by the applicant's project representative. The applicant project representative shall be a principal executive officer of at least the level of vice president, in the case of a corporation; general partner, in the case or a partnership; or proprietor, in the case of a sole proprietorship. The Permits and Inspections Division will forward all COGP documents to the Public Work Department (PWD) for review.
- The applicant engineer shall submit one set of plans (3.d) to Papio-Missouri River Natural Resources District (P-MRNRD).
- Once the PWD finds all submitted documents preliminarily acceptable, the City will issue two set of plans (3.d) with the PWD's preliminary stamp to the applicant engineer.
- The applicant's engineer shall submit the following documents to the Nebraska Department of Environmental Quality (NDEQ):
  - One set of plans (3.d) with the PWD's preliminary stamp.
  - One NPDES permit form (3.c).Once the NDEQ finds the submittal acceptable, a NPDES permit approval letter will be issued to the applicant. If the NDEQ fails to review and approve or deny the submittal within 7 working day the applicant may request the PWD to issue the COGP.
- After receiving a NDEQ permit approval letter, the PWD will issue the following documents to the

applicant engineer:

- a) One set of plans (3.d) with the PWD's final approval stamp.
- b) A GPAF (3.b) signed by the PWD.

At this point the applicant may consider the COGP approved.

- 8. Site stripping or grading shall not be started prior to receiving a approved COGP. Furthermore, all of the storm sewer pipe needed for sedimentation basin construction must be on site before the start of any grading or stripping.
- 9. The applicant must notify the PWD in writing 48 hours before the start of any stripping or grading operations. The Stripping / Grading Notification Form (SGNF) must be delivered to the PWD.
- 10. The applicant must notify the PWD in writing that all erosion control devices have been installed as shown on the approved grading and soil erosion control plan within 5 days after the start of any stripping or grading. The Erosion Control Devices Installation Notification Form (ECDINF) must be delivered to the PWD.
- 11. The applicant must keep all sedimentation basins in place until the following conditions have been met:
  - a) 75% of each sedimentation basins drainage area has been stabilized to its ultimate condition.
  - b) The PWD has given its approval for the sedimentation basin removal.
- 12. A written request must be submitted to the PWD to close any silt basins or modify any erosion control devices shown on the SWPPP. The Grading Permit Modification Form (GPMF) must be delivered to the PWD.
- 13. The applicant's engineer, who is a professional engineer registered in the state of Nebraska, shall be responsible for assuring compliance with the approved plans and SWPPP. The engineer will maintain weekly reports while the grading and erosion control measures are being implemented. Once in place, monthly reports are to be maintained outlining the status of the erosion control devices. All sites are to be inspected by the engineer at a minimum of every seven (7) days and within 24 hours of a storm event 0.5 inches or more. These inspections and reports are to continue for the term of the NDEQ Permit.
- 14. At the completion of the COGP's usefulness, the applicant must submit a Grading Permit Closure Form (GPCF) with supporting documentation to the PWD. The GPCF shall certify the erosion control measures constructed are no longer needed and the conditions of the COGP have been met.

#### CERTIFICATION

I the applicant certify that I am familiar with the information contained in this Grading Permit Procedures Form, that to the best of my knowledge and belief such information is true, complete and accurate, and if the permit is granted, I agree to abide by the City of Omaha Grading Permit (reference Sections 43-264 through 43-268 of the Omaha Municipal Code) and all rules, regulations, orders, and decisions promulgated there under.

Applicant's Signature

Date

#### GOVERNMENTAL AGENCY MAILING ADDRESSES

##### **Permits & Inspections Division**

City of Omaha  
Planning Department  
Attention: Mike Howard  
Omaha/Douglas Civic Center  
1819 Farnam Street, Suite  
1100  
Omaha, Nebraska 68183

##### **Public Works Department**

City of Omaha  
Design Division  
Attention: Geoffrey Goodwin  
Omaha/Douglas Civic Center  
1819 Farnam Street, Suite 600  
Omaha, Nebraska 68183

##### **Papio-Missouri River Natural Resources District**

Attention: Gerry Bowen  
8901 South 154th Street  
Omaha, Nebraska 68138-  
3621

##### **Nebraska Department of Environmental Quality**

Permits and Compliance  
Section  
Attention: Jim Yeggy  
1200 "N" Street  
P. O. Box 98922  
Lincoln, Nebraska 68509-8922

# CITY OF OMAHA

Public Works Department (PWD)  
Design Division

Private Plans Section  
1819 Farnam Street, Suite 600  
Omaha Nebraska, 68183

INTEROFFICE USE ONLY

Project #

File #

## GRADING PERMIT APPLICATION FORM

| SITE INFORMATION |       |          | APPLICANT              |         |          |
|------------------|-------|----------|------------------------|---------|----------|
| Project Name     |       |          | Business Name          |         |          |
| Street Address   |       |          | Project Representative |         |          |
| City             | State | Zip Code | Project Rep.'s Title   | Phone # |          |
| Subdivision Name |       | S&ID #   | Street Address         |         |          |
| ¼ Section        |       |          | City                   | State   | Zip Code |

| APPLICANT'S PROJECT ENGINEER |         |          | APPLICANT'S GRADING CONTRACTOR |         |          |
|------------------------------|---------|----------|--------------------------------|---------|----------|
| Business Name                |         |          | Business Name                  |         |          |
| Project Representative       |         |          | Project Representative         |         |          |
| Project Rep.'s Title         | Phone # |          | Project Rep.'s Title           | Phone # |          |
| Street Address               |         |          | Street Address                 |         |          |
| City                         | State   | Zip Code | City                           | State   | Zip Code |

## PERMIT REQUEST

The applicant hereby requests permission to grade and provide erosion control at the aforementioned location. Under the terms of this permit the applicant agrees to do the following:

1. Comply with the requirements contained in the Grading Permit Procedures Form which is an integral part of this permit application.
2. Assume all responsibility for the implementation, construction, and maintenance associated with this Grading Permit Application Form.
3. Enter into agreements with the aforementioned project engineer and grading contractor to perform all applicable duties listed in the *City of Omaha Soil Erosion and Sediment Control Manual*.

### SUBMITTALS

The applicant agrees to submit the following documents before requesting City approval for this permit:

1. A permitting fee in the amount of \$500.00 for a site less than 10 acres or \$1000.00 for a site greater than 10 acres.
2. One Grading Permit Application Form (GPAF).
3. One National Pollutant Discharge Elimination System (NPDES) Permit Forms CSW-NOI.
4. Five duplicate sets of plans on 24" X 36" paper containing the details of the proposed Storm Water Pollution Prevention Plan (SWPPP).
5. One Grading Permitting Procedures Form (GPPF).

### CERTIFICATION

I certify that I am familiar with the information contained in this Grading Permit Application Form, that to the best of my knowledge and belief such information is true, complete and accurate, and if the permit is granted, I agree to abide by the City of Omaha Grading Permit (reference Sections 43-264 through 43-268 of the Omaha Municipal Code) and all rules, regulations, orders, and decisions promulgated there under.

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

### CITY APPROVAL

This is not a valid permit until it has been signed by the appropriate City official.

\_\_\_\_\_  
City Approval Signature

\_\_\_\_\_  
Date

# CITY OF OMAHA

Public Works Department (PWD)  
Design Division  
Private Plans Section  
1819 Farnam Street, Suite 600  
Omaha Nebraska, 68183

## EROSION CONTROL DEVICE INSTALLATION NOTIFICATION FORM

### PROJECT INFORMATION

|                           |              |  |
|---------------------------|--------------|--|
| Project #                 | Project Name | Project Location                             |
| Applicant's Business Name |              | Applicant's Project Representative           |
| Engineering Company       |              | Engineering Company's Project Representative |
| Grading Contractor        |              | Grading Contractor's Project Representative  |

### CERTIFICATION

I certify that I am familiar with the information contained in the City Of Omaha Grading Permit application, that to the best of my knowledge and belief such information is true, complete and accurate. I am hereby notifying the PWD that all erosion control devices have been installed as shown on the approved grading and soil erosion control plan. I understand that A written request must be submitted to the PWD to close any silt basins or modify any erosion control devices shown on the grading plan. The Grading Permit Modification Request must be delivered to the PWD (Attention: Mr. Geoffrey Goodwin, City of Omaha, Public Works Department, Design Division, Omaha/Douglas Civic Center, 1819 Farnam Street, Suite 600, Omaha, Nebraska 68183) for processing.

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

# CITY OF OMAHA

Public Works Department (PWD)  
Design Division  
Private Plans Section  
1819 Farnam Street, Suite 600  
Omaha Nebraska, 68183

## STRIPPING / GRADING NOTIFICATION FORM

### PROJECT INFORMATION

|                     |           |  |                  |
|---------------------|-----------|--|------------------|
| Start Date          | Project # | Project Name                                 | Project Location |
| Applicant's Title   |           | Applicant's Name                             |                  |
| Engineering Company |           | Engineering Company's Project Representative |                  |
| Grading Contractor  |           | Grading Contractor's Project Representative  |                  |

### CERTIFICATION

I certify that I am familiar with the information contained in the final approved City Of Omaha Grading Permit issued under the aforementioned project number, that to the best of my knowledge and belief such information is true, complete and accurate. I am hereby notifying the PWD that stripping and or grading will begin on the aforementioned start date . I understand that I must notify the PWD in writing that all erosion control devices have been installed as shown on the approved grading/erosion plan within 5 working days after the aforementioned date . Furthermore, the Erosion Control Devices Installation Notification must be delivered to the PWD (Attention: Mr. Geoffrey Goodwin, City of Omaha, Public Works Department, Design Division, Omaha/Douglas Civic Center, 1819 Farnam Street, Suite 600, Omaha, Nebraska 68183) for processing.

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

# CITY OF OMAHA

Public Works Department  
Design Division  
Private Plans Section  
1819 Farnam Street, Suite 600  
Omaha Nebraska, 68183

## GRADING PERMIT CHANGE OF APPLICANT REQUEST FORM

### GRADING PERMIT INFORMATION

|                           |              |                |                                    |       |          |
|---------------------------|--------------|----------------|------------------------------------|-------|----------|
| Project #                 | Project Name | Street Address |                                    |       |          |
| Subdivision Name          | S&ID #       | ¼ Section      | City                               | State | Zip Code |
| Applicant's Business Name |              |                | Applicant's Project Representative |       |          |

### CURRENT APPLICANT

|                        |         |          |
|------------------------|---------|----------|
| Company Name           |         |          |
| Project Representative |         |          |
| Project Rep.'s Title   | Phone # |          |
| Street Address         |         |          |
| City                   | State   | Zip Code |

### NEW APPLICANT

|                        |         |          |
|------------------------|---------|----------|
| Company Name           |         |          |
| Project Representative |         |          |
| Project Rep.'s Title   | Phone # |          |
| Street Address         |         |          |
| City                   | State   | Zip Code |

### PERMIT REQUEST

The new applicant hereby requests permission to grade and provide erosion control at the aforementioned location. Under the terms of this request the new applicant agrees to do the following:

1. Comply with the requirements contained in the Grading Permitting Procedures Form (GPPF).
2. Assume all responsibility for the implementation, construction, and maintenance associated with aforementioned grading permit currently in place.
3. Enter into a agreement with the current Applicant's project engineer and grading contractor to perform all applicable duties listed in the *City of Omaha Soil Erosion and Sediment Control Manual*.

**CERTIFICATION**

I certify that I am familiar with the information contained in this Grading Permit Change of Applicant Request Form, that to the best of my knowledge and belief such information is true, complete and accurate, and if the change is granted, I agree to abide by the City of Omaha Grading Permit (reference Sections 43-264 through 43-268 of the Omaha Municipal Code) and all rules, regulations, orders, and decisions promulgated there under.

---

New Applicant's Signature

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Date**CITY APPROVAL**

This Grading Permit Change of Applicant Request Form is not valid until it has been signed by the appropriate City official.

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City Approval Signature

---

Date

# CITY OF OMAHA

Public Works Department  
Design Division  
Private Plans Section  
1819 Farnam Street, Suite 600  
Omaha Nebraska, 68183

## GRADING PERMIT CHANGE OF GRADING CONTRACTOR FORM

### GRADING PERMIT INFORMATION

|                           |              |                |                                    |       |          |
|---------------------------|--------------|----------------|------------------------------------|-------|----------|
| Project #                 | Project Name | Street Address |                                    |       |          |
| Subdivision Name          | S&ID #       | ¼ Section      | City                               | State | Zip Code |
| Applicant's Business Name |              |                | Applicant's Project Representative |       |          |

### APPLICANT'S EXISTING GRADER

|                        |         |          |
|------------------------|---------|----------|
| Company Name           |         |          |
| Project Representative |         |          |
| Project Rep.'s Title   | Phone # |          |
| Street Address         |         |          |
| City                   | State   | Zip Code |

### APPLICANT'S NEW GRADER

|                        |         |          |
|------------------------|---------|----------|
| Company Name           |         |          |
| Project Representative |         |          |
| Project Rep.'s Title   | Phone # |          |
| Street Address         |         |          |
| City                   | State   | Zip Code |

### NOTIFICATION

The applicant hereby requests permission to Enter into a agreement with a new grading contractor. The new grading contractor meets all PWD qualifications. Furthermore, the new grading contractor will perform all applicable duties listed in the *City of Omaha Soil Erosion and Sediment Control Manual* and the Grading Permit Procedural Form.

### CERTIFICATION

I certify that I am familiar with the information contained in this Grading Permit Change of Grading Contractor Form, that to the best of my knowledge and belief such information is true, complete and accurate, and if the change is granted, I agree to abide by the City of Omaha Grading Permit (reference Sections 43-264 through 43-268 of the Omaha Municipal Code) and all rules, regulations, orders, and decisions promulgated there under.

---

Applicant's Signature

---

Date

# CITY OF OMAHA

Public Works Department (PWD)  
Design Division  
Private Plans Section  
1819 Farnam Street, Suite 600  
Omaha Nebraska, 68183

## GRADING PERMIT CHANGE OF PROJECT ENGINEER FORM

### GRADING PERMIT INFORMATION

|                           |              |                |                                    |       |          |
|---------------------------|--------------|----------------|------------------------------------|-------|----------|
| Project #                 | Project Name | Street Address |                                    |       |          |
| Subdivision Name          | S&ID #       | ¼ Section      | City                               | State | Zip Code |
| Applicant's Business Name |              |                | Applicant's Project Representative |       |          |

### APPLICANT'S EXISTING ENGINEER

### APPLICANT'S NEW ENGINEER

|                        |         |          |                        |         |          |
|------------------------|---------|----------|------------------------|---------|----------|
| Company Name           |         |          | Company Name           |         |          |
| Project Representative |         |          | Project Representative |         |          |
| Project Rep.'s Title   | Phone # |          | Project Rep.'s Title   | Phone # |          |
| Street Address         |         |          | Street Address         |         |          |
| City                   | State   | Zip Code | City                   | State   | Zip Code |

### NOTIFICATION

The applicant hereby requests permission to enter into a agreement with a new project engineer. The new project engineer meets all PWD qualifications. Furthermore, the new engineer will perform all applicable duties listed in the *City of Omaha Soil Erosion and Sediment Control Manual* and the Grading Permit Procedural Form.

### CERTIFICATION

I certify that I am familiar with the information contained in this Grading Permit Change of Project Engineer Form, that to the best of my knowledge and belief such information is true, complete and accurate, and if the change is granted, I agree to abide by the City of Omaha Grading Permit (reference Sections 43-264 through 43-268 of the Omaha Municipal Code) and all rules, regulations, orders, and decisions promulgated there under.

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

## CITY OF OMAHA

Public Works Department (PWD)  
Design Division  
Private Plans Section  
1819 Farnam Street, Suite 600  
Omaha Nebraska, 68183

### GRADING PERMIT MODIFICATION REQUEST FORM

#### PROJECT INFORMATION

|                           |              |  |
|---------------------------|--------------|--|
| Project #                 | Project Name | Project Location                             |
| Applicant's Business Name |              | Applicant's Project Representative           |
| Engineering Company       |              | Engineering Company's Project Representative |
| Grading Contractor        |              | Grading Contractor's Project Representative  |

#### SUBMITTALS

The following items must be submitted to qualify for a Grading Plan Modification:

1. A detailed explanation justifying the need for the proposed modification.
2. Two duplicate sets of grading & soil erosion control plans showing all existing conditions and proposed modification will be needed.
3. All necessary calculations supporting the proposed modification will be needed.

#### CERTIFICATION

I certify that I am familiar with the information contained in this Grading Permit Modification Request, that to the best of my knowledge and belief such information is true, complete and accurate. I am requesting approval for my Grading Permit Modification. I understand that the construction proposed in this application may not be started without PWD approval. Furthermore, it is fully understood any construction done without the PWD's approval of the Grading Permit Modification Requested will put the Applicant in violation of his or her City Of Omaha Grading Permit.

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

#### CITY APPROVAL

This request cannot be considered approved until it has been signed by the appropriate City official.

\_\_\_\_\_  
City Approval Signature

\_\_\_\_\_  
Date

# CITY OF OMAHA

Public Works Department (PWD)  
Design Division  
Private Plans Section  
1819 Farnam Street, Suite 600  
Omaha Nebraska, 68183

## GRADING PERMIT CLOSURE REQUEST FORM

### PROJECT INFORMATION

|                           |              |  |
|---------------------------|--------------|--|
| Project #                 | Project Name | Project Location                             |
| Applicant's Business Name |              | Applicant's Project Representative           |
| Engineering Company       |              | Engineering Company's Project Representative |
| Grading Contractor        |              | Grading Contractor's Project Representative  |

### SUBMITTALS

To be considered for a grading permit closure the applicant must submit at minimum the following documents:

1. A signed Grading Permit Closure Request Form.
2. A detailed report from the project engineer showing the following:
  - a) A site map with the locations and the current conditions of all erosion control measures. Furthermore, the sub basins impacting each erosion control measure should be delineated on the site map with a detailed description outlining there current ground cover conditions.
  - b) That 75% of each of the projects sub basins have been developed and stabilized to there ultimate condition.
  - c) That the Removal of the sedimentation and erosion control measures will not adversely effect this project or any surrounding properties.
  - d) That the conditions of the City Of Omaha Grading Permit have been met for this project.

### CERTIFICATION

I certify that I am familiar with the information contained in the City Of Omaha Grading Permit issued under the aforementioned project number, that to the best of my knowledge and belief such information is true, complete and accurate. Furthermore, I certify the soil erosion control measures constructed are no longer needed and the conditions of the City Of Omaha Grading Permit have been met. I am. Therefore requesting approval of the Grading Permit Closure Form for this project. I understand that the soil erosion control measures in this City Of Omaha Grading Permit may not be removed without the PWD approval of the Grading Permit Closure Form. Furthermore, it is fully understood any soil erosion control measures removed without the PWD's approval of this request form will put the Applicant in violation of his or her City Of Omaha Grading Permit.

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

**CITY APPROVAL**

This is not a valid permit until it has been signed by the appropriate City official.

\_\_\_\_\_  
City Approval Signature

\_\_\_\_\_  
Date

EXAMPLE FORM

STATE\SWPPP

Storm Water Pollution Prevention Plan (SWPPP)

This plan was prepared on \_\_\_\_\_ (date) and is subject to change. A description of any required changes can be found in the attached Addendums. The "application for authorization to discharge" contains information (i.e., site map, vegetative and physical erosion controls, runoff coefficient, impervious area estimate, soil type, fill material description, and receiving stream) that was used or taken into consideration in the development of this SWPPP. The application is incorporated into this SWPPP as Addendum 1.

Construction Project Name and Location

Owner/Contractor Responsible for NPDES Storm Water Permit Compliance

(i.e., Contractor to whom the authorization to discharge was issued.)

Name, contact person, address, and telephone

Subcontractors Responsible for Implementing Aspects of the SWPPP Name, contact person, address, telephone, and responsibilities

Federal, State and Local Regulations besides NPDES that Apply to this Site (Provide brief explanation and contact)

US Army Corps of Engineers CWA § 404 permit:

Natural Resource District:

City/County Planning or Building Codes:

Other:

Identification and Justification for the Vegetative and Physical Erosion Controls Used.

Provide Justification if Any of the Following are not Used

Temporary detention/silt basins for drainages having 5 or more acres disturbed.

Temporary seeding during interim stages of the project

Graveled entryway and parking area

Graveled roadways where traffic exceeds 25 vehicles per day

Basic Project Schedule including Pollution Prevention Practices

Waste Disposal and Spill Prevention

Trees and Brush from site

Refuse previously on-site

Refuse generated at site

Fuel/lubricant spill prevention and response procedures

Spill prevention and response procedures for other chemicals and/or hazardous materials used on site

Post-Construction Storm Water Management

# STATE OF NEBRASKA

STATE\CSWSTART

DEPARTMENT OF ENVIRONMENTAL QUALITY

Randolph Wood

Director

Suite 400, The Atrium

1200 "N" Street

P.O. Box 98922

Lincoln, Nebraska 68509-8922

Phone (402) 471-2186

## NPDES Form CSW-START - Notice of Start-up of Construction Activity

This form may be used to notify the Department that construction activity has been started at a site having coverage under the NPDES general permit for storm water discharges from construction sites, NER100000. Submittal of this form fulfills the requirements of Section C.7.a of the permit.

This form is not the Notice of Intent or NOI form which is used to request discharge authorization. An NOI must be submitted prior to or concurrent with this form to obtain discharge authorization.

NPDES Permit Identification Number: NER 1 0 \_\_\_\_\_

Facility Name: \_\_\_\_\_

Facility Location: \_\_\_\_\_

Date Construction Activities were or will be Commenced: \_\_\_\_\_

Signature of Authorized Representative or Cognizant Official \*\*

Date

Printed Name

Title

\*\* The qualifications and responsibilities of the "cognizant official" are set forth below and in NDEQ Title 119 Chapter 10.001:

All permit applications submitted to the Department shall be signed;

001.01 In the case of corporation, by a principal executive officer of at least the level of vice-president;

001.02 In the case of a partnership, by a general partner;

001.03 In the case of a sole partnership, by a general partner; and

001.04 In the case of a municipal, State or other public facility by either a principal executive officer or ranking elected official."

\*\* The qualifications and responsibilities for the "authorized representative" are set forth in NDEQ Title 119 Chapter 10.002:

"All other correspondence, reports and DMR's shall be signed by a person designated in 001.01 through 0001.04 above or a duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates; the authorization is made in writing by the person designated under 001.01 through 001.04 above; and the written authorization is submitted to the Director."

Submit the completed form to:

Mail Address:

Permits and Compliance Section  
Nebraska Department of Environmental Quality  
PO Box 98922  
Lincoln, NE 68509-8922

Location Address:

Permits and Compliance Section  
Nebraska Department of Environmental Quality  
1200 "N" Street, The Atrium, Suite 400  
Lincoln, NE 68509

# STATE OF NEBRASKA

STATE\CSW-END.DEQ

Permits and Compliance Section  
Nebraska Department of Environmental Quality  
1200 "N" Street, Suite 400, The Atrium  
P.O. Box 98922  
Lincoln, NE 68509-8922  
Tel. 402/471-2186  
Fax 402/471-2909

## NPDES Form CSW-END - Notice of Completion of Construction Activity

=====

This form may be used to fulfill the requirements of Section C.7.b of the NPDES general permit for storm water discharges from construction sites, NER100000. This notice should be submitted when 95% of permitted construction site has been stabilized with perennial vegetation or other permanent cover. Coverage under the permit is typically terminated 180 days after 95% of the site is stabilized (See permit Section B.4.a).

=====

NPDES Permit Identification Number: NER   1     0   \_\_\_\_\_

Facility Name: \_\_\_\_\_

Facility Location: \_\_\_\_\_

Date when 95% of the area of the site was stabilized: \_\_\_\_\_

Proposed date for ending permit coverage: \_\_\_\_\_ \*\*

\*\*Must be at least 180 days after the date when 95% of the site was stabilized.

=====

\_\_\_\_\_  
Signature of Authorized Representative or Cognizant Official \*\*

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

=====

\*\* The qualifications and responsibilities of the "cognizant official" are set forth below and in NDEQ Title 119 Chapter 10.001:

All permit applications submitted to the Department shall be signed;

001.01 In the case of corporation, by a principal executive officer of at least the level of vice-president;

001.02 In the case of a partnership, by a general partner;

001.03 In the case of a sole partnership, by a general partner; and

001.04 In the case of a municipal, State or other public facility by either a principal executive officer or ranking elected official."

\*\* The qualifications and responsibilities for the "authorized representative" are set forth in NDEQ Title 119 Chapter 10.002:

"All other correspondence, reports and DMR's shall be signed by a person designated in 001.01 through 0001.04 above or a duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates; the authorization is made in writing by the person designated under 001.01 through 001.04 above; and the written authorization is submitted to the Director."

=====

Submit the completed form to:

Mail Address:

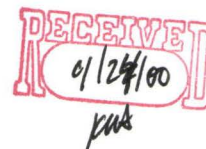
Permits and Compliance Section  
Nebraska Department of Environmental Quality  
PO Box 98922  
Lincoln, NE 68509-8922

Location Address:

Permits and Compliance Section  
Nebraska Department of Environmental Quality  
1200 "N" Street, The Atrium, Suite 400  
Lincoln, NE 68509

=====

# SPECIFICATIONS



## CORRECTIVE MEASURE IMPLEMENTATION AND INTERIM ACTION REMOVALS

### Omaha Shops

U.S. EPA Docket No. RCRA-7-2000-0026  
RCRA I.D. No. NED000829754



*Prepared for*  
Union Pacific Railroad Company  
Omaha, Nebraska

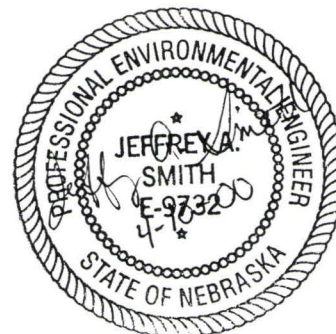


**ENVIRONMENTAL MANAGEMENT**

April 2000

**URS Greiner Woodward Clyde**

101 South 108th Avenue  
Omaha, Nebraska



**SECTION 01130  
MEASUREMENT AND BASIS OF PAYMENT**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Payment for work in accordance with the provisions of the General Conditions, the Supplementary Conditions, the Proposal, the Agreement, and this Section.
- B. Related Sections
  - 1. Section 02200 - Earthwork
  - 2. Section 02250 - Contaminated Soil Removal
  - 3. Section 02260 - Lead Hazard Abatement and Disposal
  - 4. Section 02270 - Asbestos Hazard Abatement and Disposal

**1.2 JOB DESCRIPTION**

- A. The project consists of five areas:
  - 1. Paint Barrel Pits
  - 2. Asbestos Area
  - 3. PCS Area
  - 4. Lead Area
  - 5. Acetylene Sludge Pits
- B. The estimated limits of the five areas and limits of the excavations are shown on the Drawings.

**1.3 PAY ITEMS**

- A. Submit requests for payment at the prices indicated in the Proposal.
  - 1. Prices for each bid item in the proposal shall include but not be limited to cost for:
    - a. Cleanup and insurance.
    - b. Professional services including but not limited to engineering and legal fees.
    - c. The products to be permanently incorporated into the project
    - d. The products consumed during the construction of the project.
    - e. The labor and supervision to complete the project.
    - f. The equipment, including tools, machinery, and appliances required to complete the project.
    - g. The field and home office administration and overhead costs related directly or indirectly to the project.
  - 2. Costs of taxes shall be included in the price quoted for each bid item. Costs for performance bond shall be included as a separate bid item. Costs for taxes and bond shall reflect the actual costs for these items.
  - 3. Payment shall be based on the actual quantity of work completed per Contract Documents and measured per this Section.
  - 4. The work covered by Progress Payments shall become the property of the Owner at the time of payment.
- B. Application for payment shall be submitted per the provisions of this Section.

## 1.4 BID ITEM DESCRIPTIONS

### A. General Conditions

1. Trailer: The unit price bid item shall be full compensation for providing a job trailer at the site during the project duration. The Contractor will be responsible for all utilities, including hook-up. The trailer shall be large enough for use by Contractor personnel and the Engineer, including layout space for plans and drawings. The bid price shall include labor, materials, and incidentals required for providing and maintaining the trailer. Payment shall be based on a monthly rate.
2. Health, Safety, and Emergency Response: The lump sum bid for this item shall be full compensation for preparation of a Contractor's Site Safety and Health Plan (SSHP) for all phases of work described. The SSHP shall be reviewed and accepted by the Engineer prior to work beginning.
3. Miscellaneous Debris Removal: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to remove miscellaneous debris prior to excavation, and stockpiling the materials in the appropriate stockpile as identified in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on cubic yards of material removed as determined and agreed upon between the Contractor and Engineer prior to moving the debris to the stockpile area.

### B. Paint Barrel Pits

1. Submittals: The lump sum bid for this item shall be full compensation for furnishing required submittals. The bid price shall include labor, materials, and incidentals required for completing all submittals.
2. Mobilization/Demobilization: The lump sum bid for this item shall be full compensation for personnel, equipment, and supplies for mobilization and demobilization to the project site. Mobilization and demobilization shall include, but is not limited to, the movement of personnel, equipment, supplies, etc. to and from the project site prior to beginning the work and following its completion for this phase of work.
3. Concrete Removal: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to remove concrete prior to and during excavation, and stockpiling the materials in the appropriate stockpile as identified in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on cubic yards of concrete measured in-place prior to removal and agreed upon between the Contractor and Engineer prior to moving the concrete to the stockpile area.
4. Excavation: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to complete the excavations set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated as determined by a survey of the area to be excavated prior to excavation activities compared to a survey of the excavated area prior to backfilling.
5. Stabilize Lead Soil: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to construct a stabilization pad and stabilize lead containing soil, as directed by the Engineer. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the tons of fly ash used as determined by load tickets from the supplier.
6. Load and Transport: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to move the excavated material to the soil stockpile area as set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated and fly ash used as determined in Items 4 and 5, respectively.

7. Load for Disposal: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to load the excavated and stabilized material into gondola cars as set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated and fly ash used as determined in Items 4 and 5, respectively.
8. Fencing: The unit price bid for this item shall be full compensation for furnishing and installing temporary 6-foot chain link fencing. The bid price shall include labor, equipment, materials, gates, fittings, and incidentals. Payment shall be based on the total linear footage of fence installed.
9. Off-Site Borrow Soil: The unit price bid for this item shall be full compensation for obtaining off-site borrow material and transporting to site as per the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 4.
10. Spread and Compact: The unit price bid for this item shall be full compensation for spreading and compacting borrow material as per the Contract Documents. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 4.
11. Standby: The unit price bid for this item shall be full compensation for time that the Contractor is forced to stop work by the Owner, Engineer, or other authority due to no fault of the Contractor. The Contractor shall not be compensated for standby due to weather. The Contractor shall not be compensated for standby if Contractor's personnel may reasonably be used in other areas of the project during downtime. Payment shall be based on an hourly rate.
12. On-Site Borrow Soil: The unit price bid for this item shall be full compensation for loading and transporting on-site borrow material as per the Contract Documents. On-site borrow material shall only be used as directed by the Engineer. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 4.

C. Asbestos Area

1. Submittals: The lump sum bid for this item shall be full compensation for furnishing required submittals. The bid price shall include labor, materials, and incidentals required for completing all submittals.
2. Mobilization/Demobilization: The lump sum bid for this item shall be full compensation for personnel, equipment, and supplies for mobilization and demobilization to the project site. Mobilization and demobilization shall include, but is not limited to, the movement of personnel, equipment, supplies, etc. to and from the project site prior to beginning the work and following its completion for this phase of work.
3. Health, Safety, and Emergency Response: The lump sum bid for this item shall be full compensation for preparation of the Contractor's Asbestos Hazard Abatement Plan (AHAP) which shall be reviewed and accepted by the Engineer prior to work beginning.
4. Air Monitoring: The lump sum bid for this item shall be full compensation for personnel air monitoring of employees working within the Asbestos areas.
5. Concrete Removal: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to remove concrete and/or asphalt pavements prior to and during excavation, and stockpiling the materials in the appropriate stockpile as identified in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on cubic yards of concrete and/or asphalt measured in-place prior to removal and agreed upon between the Contractor and Engineer prior to moving the concrete and/or asphalt to the stockpile area.

6. Excavation: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to complete the excavations set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be made based on the cubic yards of material excavated as determined by a survey of the area to be excavated prior to excavation activities compared to a survey of the excavated area prior to backfilling.
7. Wet Soil: The unit price bid for this item shall be full compensation for wetting soil to avoid air borne dust issues. The bid price shall include labor, equipment, and incidentals. Payment shall be made based on the volume of water used on a 1,000 gallon basis as metered from an on-site fire hydrant.
8. Load and Transport: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to load and transport the excavated material to the disposal facility as set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated as determined in Item 6.
9. Disposal: The unit price bid for this item shall be full compensation for disposing of soil containing asbestos. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the actual weight tickets from the disposal facility.
10. Off-Site Borrow Soil: The unit price bid for this item shall be full compensation for obtaining off-site borrow material and transporting to site as per the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 6.
11. Spread and Compact: The unit price bid for this item shall be full compensation for spreading and compacting borrow material as per the Contract Documents. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 6.
12. Standby: The unit price bid for this item shall be full compensation for time that the Contractor is forced to stop work by the Owner, Engineer, or other authority due to no fault of the Contractor. The Contractor shall not be compensated for standby to due weather. The Contractor shall not be compensated for standby if Contractor's personnel may reasonably be used in other areas of the project during downtime. Payment shall be based on an hourly rate.
13. On-Site Borrow Soil: The unit price bid for this item shall be full compensation for loading and transporting on-site borrow material as per the Contract Documents. On-site borrow material shall only be used as directed by the Engineer. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 6.

D. PCS Area

1. Submittals: The lump sum bid for this item shall be full compensation for furnishing required submittals. The bid price shall include labor, materials, and incidentals required for completing all submittals.
2. Mobilization/Demobilization: The lump sum bid for this item shall be full compensation for personnel, equipment, and supplies for mobilization and demobilization to the project site. Mobilization and demobilization shall include, but is not limited to, the movement of personnel, equipment, supplies, etc. to and from the project site prior to beginning the work and following its completion for this phase of work.
3. Treatment Building Removal: The lump sum bid for this item shall be full compensation for removing the Treatment Building as identified in the Contract Documents. The bid price shall include labor, materials, and incidentals required for completing the removal.

4. Concrete Removal: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to remove concrete prior to and during excavation, and stockpiling the materials in the appropriate stockpile as identified in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on cubic yards of concrete measured in-place prior to removal and agreed upon between the Contractor and Engineer prior to moving the concrete to the stockpile area.
5. Construct Saturated Soil Staging Area: The lump sum bid for this item shall be full compensation for constructing a saturated soil staging area by excavating or placing and compacting soil berms around the staging area and installing a liner with a slope to one end to collect liquids. Liquids collected in the low end of the staging area shall be collected and transported to the dewatering tanks. The bid price shall include labor, equipment, materials, and incidentals.
6. Excavation: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to complete the excavations set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated as determined by a survey of the area to be excavated prior to excavation activities compared to a survey of the excavated area prior to backfilling.
7. Recovery Dewatering: The unit price bid for this item shall be full compensation for maintaining the water levels in the excavation as described in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the number of days required for recovery dewatering.
8. Pre-Backfill Dewatering: The unit price bid for this item shall be full compensation for completely dewatering the excavation prior to backfill as described in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the number of days required for pre-backfill dewatering.
9. Plug Sewers: The lump sum bid for this item shall be full compensation for plugging the 42 and 44-inch sewer as described in the Contract Documents. The bid price shall include labor, equipment, materials and incidentals.
10. Load and Transport: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to load and transport the excavated material to the soil stockpile area as set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 6.
11. Load Gondolas: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to load and transport the excavated material to the disposal facility as set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 6.
12. Fencing: The unit price bid for this item shall be full compensation for furnishing and installing temporary 6-foot chain link fencing. The bid price shall include labor, equipment, materials, gates, fittings, and incidentals. Payment shall be based on the total linear footage of the fence installed.
13. Off-Site Borrow Soil: The unit price bid for this item shall be full compensation for obtaining off-site borrow material and transporting to site as per the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 6.
14. Spread and Compact: The unit price bid for this item shall be full compensation for spreading and compacting borrow material as per the Contract Documents. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 6.

15. Standby: The unit price bid for this item shall be full compensation for time that the Contractor is forced to stop work by the Owner, Engineer, or other authority due to no fault of the Contractor. The Contractor shall not be compensated for standby due to weather. The Contractor shall not be compensated for standby if Contractor's personnel may reasonably be used in other areas of the project during downtime. Payment shall be based on an hourly rate.
16. On-Site Borrow Soil: The unit price bid for this item shall be full compensation for loading and transporting on-site borrow material as per the Contract Documents. On-site borrow material shall only be used as directed by the Engineer. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Item 6.

E. Lead Area

1. Submittals: The lump sum bid for this item shall be full compensation for furnishing required submittals. The bid price shall include labor, materials, and incidentals required for completing all submittals.
2. Mobilization/Demobilization: The lump sum bid for this item shall be full compensation for personnel, equipment, and supplies for mobilization and demobilization to the project site. Mobilization and demobilization shall include, but is not limited to, the movement of personnel, equipment, supplies, etc. to and from the project site prior to beginning the work and following its completion for this phase of work.
3. Health, Safety, and Emergency Response: The lump sum bid for this item shall be full compensation for preparation of the Contractor's Lead Hazard Abatement Plan (LHAP) which shall be reviewed and accepted by the Engineer prior to work beginning. The bid price shall include labor, materials, and incidentals required for preparing the LHAP.
4. Air Monitoring: The lump sum bid for this item shall be full compensation for personnel air monitoring of employees working within the Lead area. The bid price shall include labor, materials, and incidentals required for completing personnel air monitoring.
5. Concrete Removal: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to remove concrete prior to and during excavation, and stockpiling the materials in the appropriate stockpile as identified in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on cubic yards of concrete measured in-place prior to removal and agreed upon between the Contractor and Engineer prior to moving the concrete to the stockpile area.
6. Geotextile: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to purchase and install the geotextile fabric prior to excavation activities as described in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the square yards of geotextile required.
7. Mowing: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to completely mow and collect the clippings from the excavation area. Payment shall be based on the acres mowed.
8. Grubbing: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies to remove the upper three inches of soil from the excavation area, stockpile adjacent to and north of the embankment fill area, and subsequently place and compact in the toe of the embankment at the direction of the Engineer. Payment shall be based on one quarter (0.25) of the surveyed contaminated soil embankment compacted in-place.
9. Excavation: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to complete the excavations set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals.

Payment shall be based on three quarters (0.75) of the surveyed contaminated soil embankment compacted in-place.

10. Drain Construction: The lump sum bid for this item shall be full compensation for personnel air monitoring of employees working within the Lead area. The bid price shall include labor, materials, and incidentals required for constructing and grading a drainage collection system in the area of excavation.
11. Wet Soil: The unit price bid for this item shall be full compensation for wetting soil to avoid air borne dust issues. The bid price shall include labor, equipment, and incidentals. Payment shall be made based on the volume of water used on a 1,000 gallon basis as metered from an on-site fire hydrant.
12. Load and Transport: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to load and transport the excavated material to the embankment area as set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated as determined in Item 9.
13. Off-Site Borrow Soil: The unit price bid for this item shall be full compensation for obtaining off-site borrow material and transporting to site as per the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on a survey of the contaminated soil embankment compacted in-place.
14. Spread and Compact: The unit price bid for this item shall be full compensation for spreading and compacting borrow material as per the Contract Documents. The bid price shall include labor, equipment, and incidentals. Payment shall be based on a survey of the contaminated soil embankment compacted in-place.
15. Standby: The unit price bid for this item shall be full compensation for time that the Contractor is forced to stop work by the Owner, Engineer, or other authority due to no fault of the Contractor. The Contractor shall not be compensated for standby due to weather. The Contractor shall not be compensated for standby if Contractor's personnel may reasonably be used in other areas of the project during downtime. Payment shall be based on an hourly rate.
16. On-Site Borrow Soil: The unit price bid for this item shall be full compensation for loading and transporting on-site borrow material as per the Contract Documents. On-site borrow material shall only be used as directed by the Engineer. The bid price shall include labor, equipment, and incidentals. Payment shall be based on a survey of the contaminated soil embankment compacted in-place.

F. Acetylene Sludge Pits

1. Submittals: The lump sum bid for this item shall be full compensation for furnishing required submittals. The bid price shall include labor, materials, and incidentals required for completing all submittals.
2. Mobilization/Demobilization: The lump sum bid for this item shall be full compensation for personnel, equipment, and supplies for mobilization and demobilization to the project site. Mobilization and demobilization shall include, but is not limited to, the movement of personnel, equipment, supplies, etc. to and from the project site prior to beginning the work and following its completion for this phase of work.
3. Air Monitoring: The lump sum bid for this item shall be full compensation for personnel air monitoring of employees working within the Acetylene Sludge Pits area.
4. Excavation: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to complete the excavations set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated as determined by a survey

of the area to be excavated prior to excavation activities compared to a survey of the excavated area prior to regrading or backfilling.

5. Load and Transport: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to move the excavated material to the soil stockpile area as set forth in the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material excavated as determine in Item 4.
6. Load Gondolas: The unit price bid for this item shall be full compensation for personnel, equipment, and supplies required to load contaminated soil into gondola cars from the soil staging area, including lining and covering the gondolas as required. Payment shall be based on the cubic yards of material excavated as determine in Item 4.
7. Fencing: The unit price bid for this item shall be full compensation for furnishing and installing temporary 6-foot chain link fencing. The bid price shall include labor, equipment, materials, gates, fittings, and incidentals. Payment shall be based on the total linear footage of fence installed.
8. Berm Grading: The unit price bid for this item shall be full compensation for grading and compacting the existing berms as per the Contract Documents. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the cubic yards of material in the berm walls as determined by survey.
9. Off-Site Borrow Soil: The unit price bid for this item shall be full compensation for obtaining off-site borrow material and transporting to site as per the Contract Documents. The bid price shall include labor, equipment, materials, and incidentals. Payment shall be based on the cubic yards of material brought in as determined by a survey of the area prior to backfilling compared to a survey of the area after backfilling and compaction.
10. Spread and Compact: The unit price bid for this item shall be full compensation for spreading and compacting berm material as per the Contract Documents. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the cubic yards of material excavated, as determined in Items 8 and 9.
11. Standby: The unit price bid for this item shall be full compensation for time that the Contractor is forced to stop work by the Owner, Engineer, or other authority due to no fault of the Contractor. The Contractor shall not be compensated for standby due to weather. The Contractor shall not be compensated for standby if Contractor's personnel may reasonably be used in other areas of the project during downtime. Payment shall be based on an hourly rate.
12. On-Site Borrow Soil: The unit price bid for this item shall be full compensation for loading and transporting on-site borrow material as per the Contract Documents. On-site borrow material shall only be used as directed by the Engineer. The bid price shall include labor, equipment, and incidentals. Payment shall be based on the cubic yards of material brought in as determined by a survey of the area prior to backfilling compared to a survey of the area after backfilling and compaction.

**PART 2 PRODUCTS [NOT USED]**

**PART 3 EXECUTION [NOT USED]**

END OF SECTION 01130

## **SECTION 01300 SUBMITTALS**

### **PART 1 GENERAL**

#### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Preparing, furnishing, and processing submittals.
- B. Related Sections
  - 1. Section 02250 - Contaminated Soil Removal
  - 2. Section 02260 - Lead Hazard Abatement and Disposal
  - 3. Section 02270 - Asbestos Hazard Abatement and Disposal

#### **1.2 QUALITY ASSURANCE**

- A. Submit legible, accurate, complete documents presented in a clear, easily understood manner. Engineer will return submittals not meeting this criteria without review.
- B. Demonstrate that the proposed products are in full compliance with the design criteria and requirements of the Contract Documents including Drawings and Specifications, as modified by Addenda, Field Orders, and Change Orders.
- C. Furnish and install products that fully comply with the information included in the submittal.
- D. Review and approve submittals prior to submission. Determine and verify:
  - 1. Field measurements and field construction requirements.
  - 2. Location of existing structures, utilities, and equipment related to the submittals.
  - 3. Submittals are adequately complete for their intended purpose.
  - 4. Conflicts between the submittals related to the various subcontractors and suppliers have been resolved.
  - 5. Quantities and dimensions shown on the submittals are accurate.
- E. Submittals will not be accepted from subcontractors, suppliers, or anyone other than the Contractor.
- F. Specific submittals required are listed, but not limited to those listed, within the Submittals section of the following and/or preceding specification sections.

#### **1.3 SUBMITTAL REQUIREMENTS**

- A. Shop drawings are requested so that the Engineer can:
  - 1. Compare the proposed features of the product with the specified features so as to advise the Owner that the product does, in general, conform to the Contract Documents.
  - 2. Compare the performance features of the proposed product with those specified so as to advise the Owner that it appears that the product will meet the specified performance criteria.
  - 3. Review required certifications and warranties for compliance with the Contract Documents.
- B. Verify and certify that review of submittals has been made, complete with necessary corrections such that the products will be in full compliance with the Contract Documents.
- C. Provide statements of certification, warranties, and other related documents with the submittal. The effective date of these documents shall be the date of acceptance of the work by the Owner.

#### 1.4 SCHEDULE AND SEQUENCE

- A. Provide a schedule indicating the date submittals will be sent to the Engineer and proposed dates that the product will be incorporated into the project.
- B. Provide submittals promptly in accordance with the schedule so as to cause no delay in the project:
  - 1. Allow reasonable time for Engineer to review and markup. Time for review is to include time for resubmission if necessary and to allow adequate time for the ordering, fabrication, and delivery of the product.
  - 2. Provide information for interrelated work at one time. Engineer will not review submittals requiring coordination with other submittals, and will return such submittals for resubmission as a complete package.
- C. Installation of products prior to the approval of shop drawings is done at the Contractor's risk. Products not meeting the requirements of Contract Documents are defective and may be rejected at the Owner's option.
- D. Ensure submittals are approved prior to commencing work.
- E. Payment will not be made until approved submittals are received by Engineer.

#### **PART 2 PRODUCTS [NOT USED]**

#### **PART 3 EXECUTION**

##### 3.1 SUBMITTAL PROCEDURES

- A. Deliver submittals to the Engineer at the following address:
  - URS Greiner Woodward Clyde
  - 101 South 108th Avenue
  - Omaha, Nebraska 68154
  - Attn: Chris Poulsen
- B. Provide six (6) copies of each submittal unless otherwise specified.
- C. Transmit submittals with a properly completed Submittal Transmittal Form, a copy of which is attached.
  - 1. Provide a breakout of each transmittal component.
  - 2. Define manufacturer, item, tag number, and Drawing/Specification reference.
  - 3. Submit items specified in different specification sections separately, unless items are integrally related.
- D. Transmittal Numbering
  - 1. Number consecutively, beginning with "1"
  - 2. Letter resubmittals consecutively, beginning with "A". Resubmittals shall retain the original number.
  - 3. Clearly note the submittal number on each page or sheet of the submittal.
- E. Submit documents with uniform markings and page sizes.
  - 1. Paper size shall allow for ease of reproduction.
    - a. Submit documents on 8-1/2" X 11" paper where practical.
    - b. Use 11" X 17" paper for larger drawings and schematics.
    - c. Use full size blue-line sheets for fabrications and layout drawings. Reproducible drawings may be submitted in lieu of blue-lines.

2. Mark submittals to:
  - a. Indicate Contractor's corrections in green.
  - b. Highlight in yellow items pertinent to the products being furnished and delete items that are not when the Manufacturer's standard drawings or information sheets are provided.
  - c. Cloud items and highlight in yellow where selections by the Engineer or Owner are required.
  - d. Mark dimensions with the prefix FD to indicate field verified dimensions on the drawings.
  - e. Provide a blank space 8" x 3" for Contractor's and Engineer's stamp.
3. Define abbreviations and symbols used in shop drawings.
  - a. Use terms and symbols in shop drawings consistent with the Contract Drawings.
  - b. Provide a list of abbreviations and their meaning as used in the shop drawings.
  - c. Provide a legend for symbols used on shop drawings.
- F. Mark submittals to reference the drawing number and/or section of the specifications, detail designation, schedule or location that corresponds with the data submitted. Other identification may also be required, such as layout drawings or schedules to allow the reviewer to determine where a particular product is to be used.
- G. Construct mock-ups from the actual products to be used in construction per detailed specifications.

### 3.2 REVIEW PROCEDURES

- A. Shop drawings shall be reviewed in the order received.
  1. The Contractor may mark submittals as "Priority" for review. Contractor should use discretion in the use of "Priority" submittals as this may delay the review of submittals previously submitted.
  2. Priority submittals will be reviewed before other submittals for this project which have been received but not reviewed.
  3. Revise the Schedule of Contractor's Submittals for substantial deviations from the previous schedule.
- B. Comments will be made on items called to the attention of the Engineer for review and comment. Marks made by the Engineer do not constitute a blanket review of the submittal or relieve the Contractor from responsibility for errors or deviations from the Contract Documents.
- C. Transmittals will be reviewed for overall design intent and returned to Contractor with action "A", "B", or "C". Each component defined on the transmittal sheet will receive action.
  1. Transmittals returned with approval "A" or "B" are considered ready for fabrication and installation. If, for any reason, a transmittal that has an "A" or "B" approval is resubmitted, it must be accompanied by a letter defining the changes that have been made and the reason for the resubmittal. The Contractor shall assure that previously approved documents are destroyed when they are superseded by a resubmittal as such.
  2. Transmittals with Approval "A" or "B" combined with Action "C" (Revise and Resubmit) will be individually analyzed giving consideration as follows:
    - a. The portion of the transmittal given "C" will not be distributed, unless previously agreed to otherwise. One copy or the one transparency of the "C" Drawings will be marked up and returned to the Contractor. It shall be the Contractor's responsibility to ensure that these items are corrected and resubmitted.

- b. Items marked "A" or "B" will be fully distributed.
- c. If a portion of the items or system proposed are acceptable, however, the major part of the individual Drawing or documents are incomplete or require revision, the entire submittal may be given "C" action. This is at the sole discretion of the Engineer. In this case, some Drawings may contain relatively few or no comments or the statement, "Resubmit to maintain a complete package." Distribution to the Owner and field will not be made, unless previously agreed to otherwise.
- 3. Failure to include any specific information specified under the submittal paragraphs of the Specifications shall result in the transmittal being returned to the Contractor unapproved.
- 4. Calculations required in individual specification sections will be received for information only, and will not be returned.
- D. Submittals not required will not be reviewed.

### 3.3 RESUBMISSION

- A. Make all corrections or changes in the submittals required by the Engineer and resubmit until approved.
- B. Revisions:
  - 1. Revise initial drawings or data and resubmit as specified for the original submittal.
  - 2. Highlight in red those revisions that have been made in response to the first review by the Engineer.
  - 3. Highlight in blue any new revisions that have been made or additional details of information that has been added since the previous review by the Engineer.
- C. Engineering cost for excessive review of submittals will be paid by the Contractor.
  - 1. Excessive review of shop drawings is defined as any review required after the original review has been made and the first resubmittal has been checked to see that corrections have been made.
  - 2. Cost for additional review time will be billed to the Owner by the Engineer for the actual hours required for the review and marking of shop drawings by Engineer.
  - 3. Cost for the additional review will be subtracted from Contractor's payment requests.
- D. Need for more than one resubmission or any other delay of obtaining Engineer's review of submittals, will not entitle the Contractor to an extension of Contract Time. All costs associated with such delays shall be at the Contractor's expense.

END OF SECTION 01300

**SECTION 02200  
EARTHWORK**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Excavation and backfill of soil.
- B. Related Sections
  - 1. Section 01300 - Submittals
  - 2. Section 02250 - Contaminated Soil Removal
  - 3. Section 02260 - Lead Hazard Abatement and Disposal
  - 4. Section 02270 - Asbestos Hazard Abatement and Disposal

**1.2 REFERENCES**

- A. American Society of Testing and Materials (ASTM)
  - 1. ASTM D448 Standard Classification for Sizes of Aggregate for Road and Bridge Construction
  - 2. ASTM D698 Moisture-Density Relationship of Soils and Soil Aggregate Mixtures, Using 5.5-lb. Rammer and 12-Inch Drop
  - 3. ASTM D1556 Density of Soil In-Place by the Sand Cone Method
  - 4. ASTM D2487 Classification of Soils for Engineering Purposes
  - 5. ASTM D2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - 6. ASTM D2937 Density of Soil In-Place by the Drive Cylinder Method
  - 7. ASTM D3017 Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - 8. ASTM D4253 Test Methods for Maximum Index Density of Soils Using a Vibratory Table
  - 9. ASTM D4254 Test Methods for Minimum Index Density of Soils and Calculations of Relative Density
  - 10. ASTM D4959 Determination of Water Content of Soil by Direct Heating Method
- B. Occupational Safety and Health Administration (OSHA)
  - 1. 29 CFR 1926 Safety and Health Regulations for Construction
- C. Nebraska Department of Roads
  - 1. Standard Specifications for Highway Construction
- D. Nebraska Health and Human Services System
  - 1. Title 178 - Chapter 12 Regulations Governing Water Well Construction, Pump Installation and Water Well Decommissioning Standards.

**1.3 QUALITY ASSURANCE**

- A. Employ sufficient numbers of skilled workmen who are trained and experienced in the necessary crafts to complete the work. Use equipment adequate in size, capacity, and numbers to accomplish the work in a safe and timely fashion.
- B. Comply with appropriate Federal, State, and local government regulations.

#### 1.4 DELIVERY AND STORAGE

- A. Backfill materials may be deposited in stockpiles at points convenient for rehandling the material during the backfilling process. The location of stockpiles is subject to the approval of the Owner and Engineer.
- B. Keep drainage channels clear of stockpiled materials.

### PART 2 PRODUCTS

#### 2.1 SOIL MATERIALS

- A. On-site Fill:
  - 1. Fill materials shall be free of large or matted root systems, vegetation, other organic material, trash, demolition debris, frozen material, and brick or stone over a 4 inch dimension.
- B. Clay Fill: Locally available, low plastic clay, silty clay, sandy clay, or clayey sand, classified under USCS as CL or SC.
- C. All sources of imported soil materials are subject to the approval of the Engineer. Obtain a written, notarized certification from the supplier stating that to the best of the supplier's knowledge and belief, there has never been contamination of the source with hazardous or toxic materials.
- D. Borrow fill material shall not be taken from the Loess Hill Land Formation in Iowa. A description showing the land formation by Township, Range, and Section is available for review at URS Corporation, 101 South 108<sup>th</sup> Avenue, Omaha, Nebraska 68154.

#### 2.2 GEOTEXTILE FABRIC

- A. Geotextile fabric shall be Huesker GT No. 1 or approved equal. The geotextile shall be pervious sheets of high-tenacity polyester in the warp direction. Polypropylene yarns may be used in the fill direction. The geotextile shall meet the following mechanical property requirements (minimum average roll value):
  - 1. Wide Width Tensile Strength ASTM D4595
    - a. Warp direction 5% strain 292 kN/m
    - b. Warp direction ultimate 730 kN/m
    - c. Fill direction ultimate 130 kN/m
  - 2. Seam Strength ASTM D 4884
    - a. Factory of field 53 kN/m
  - 3. Soil/Geotextile friction angle ASTM D5321 24 degrees

### PART 3 EXECUTION

#### 3.1 PREPARATION

- A. Utility Location
  - 1. Prior to the start of construction, communicate with local representatives of utilities companies including, but not limited to, oil, gas, telephone, communications, water, and sewer. Seek assistance in locating existing utilities to avoid conflicts during construction.
  - 2. The location and type of utilities that may be present in the area are not shown completely on the Drawings.
- B. Clear excavation sites of logs, trees, roots, brush, tree trimmings, and other objectionable materials and debris. Contractor shall mow grass/weeds in all excavation areas as short as possible and gather all cuttings. All cuttings shall be disposed of by the contractor appropriately.

- C. All monitoring wells and recovery wells located within the excavation limits shall be abandoned according to Nebraska Health and Human Services System - Title 178.
- D. Remove pavements and walks within the excavation limits shown on the Drawings. Remove asphalt pavements and concrete pavements to the nearest joint. Concrete and asphalt may be stockpiled in the area shown on the drawings. All concrete and asphalt shall be decontaminated to remove gross contamination prior to stockpiling.
- E. Maintain vehicular and pedestrian traffic circulation in all public rights-of-way as directed by local authorities. Furnish, place, and maintain flags, flares, barricades, and signage to provide proper public safety.
- F. Protection of Existing Structures and Utilities
  - 1. Where construction endangers adjacent structures, embankments, railways, or roadways, carefully support and protect such structures so that no damage occurs throughout the construction process and for a period of one year following construction. In case damage occurs, Contractor is responsible for restoring damaged structures to a condition acceptable to the Owner at no additional cost to the Owner.
  - 2. Protect active utility lines to prevent interruption of service. Notify the Engineer immediately whenever an active utility line is encountered and service is interrupted. Immediately restore utility service by repairing damaged utility at no additional cost to the Owner. Immediately notify the Engineer if utilities are found to interfere with permanent facilities being constructed. Do not proceed with relocation of utilities or facilities until written instructions are received from the Engineer.
- G. All track will be removed prior to start of work by the Owner.

### 3.2 SHORING, SHEETING, AND BRACING

- A. Sheet and brace excavations when necessary to prevent caving during excavation or to protect adjacent structures, property, workers, and the public. Maintain sheeting and bracing system until work is completed, and remove in a manner that does permit voids in backfill.
- B. Shoring systems shall be designed by a Registered Professional Engineer licensed in the State of Nebraska.

### 3.3 DEWATERING

- A. Contractor shall maintain a maximum of twelve inches and a minimum of six inches of water in the petroleum contaminated soil excavation during the minimum four week waiting period as mentioned in Specification Section 2250.
- B. Contractor shall containerize all water in portable tanks. Water shall be left in tanks for a sufficient amount of time to allow any phase separated petroleum to be removed.
- C. Once phase separated product has been removed, the water may be discharged to the City of Omaha sanitary sewer at a location designated by the Engineer. Discharged water must contain less than 100 parts per million TEH as determined by EPA Method 1664.
- D. Water discharged to the City of Omaha sanitary sewer must be metered. The Engineer will verify flow volume and collect effluent samples.
- E. Contractor shall completely dewater excavation prior to placement of final backfill.

### 3.4 GENERAL EXCAVATION

- A. Excavation includes material of unclassified nature encountered including, but not limited to, clays, sands, gravels, conglomeratic boulders, weathered clay shales, rock, debris, and abandoned existing structures. Excavation includes removal and subsequent handling of materials excavated or otherwise handled in the performance of the work.
- B. Brace the excavation, if necessary, so that the workmen may work therein safely and efficiently. Any specific requirement of this specification may be modified as necessary to meet OSHA

requirements. Excavation sideslopes must conform to safety requirements specified by Federal, State, and local government regulations.

- C. Blasting is not permitted.
- D. Between dusk and dawn, fence around all open excavations not completely backfilled to finish grade to prevent access to workers or the public.
- E. Engineer will approve excavated materials for reuse as fill. Segregate reusable materials into appropriate fill classifications as directed by Engineer and stockpile for reuse. Designate non-reusable excavated materials as spoils for off-site disposal in accordance with State and local regulations.

### 3.5 BACKFILL

- A. Backfill excavations to match pre-excavation grades unless otherwise noted.
- B. Place each fill classification (structural or non-supporting) as shown on Drawings. Place backfill uniformly around structures, taking care to prevent wedging of backfill.
- C. Backfill promptly as work progress permits, but not until the following activities have been completed:
  - 1. Inspection, testing, and recording of below grade utilities.
  - 2. Removal of sheeting and bracing, and backfilling of voids.
  - 3. Removal of trash and debris.
  - 4. Acceptance by Engineer.
- D. Compaction Requirements
  - 1. Mechanically compact backfill placed in maximum uncompacted loose lifts of 8 inches. Densification by flooding or jetting is not allowed.
  - 2. Selection of compaction equipment subject to approval of Engineer. Approval to use specific compaction equipment is not to be construed as guaranteeing or implying the equipment will meet compaction requirements and not result in damage to structures. Contractor is responsible for damage caused by compaction, and shall repair damage at no additional cost to the Owner.
  - 3. Compact and adjust moisture contents of cohesive fill material to at least the following percentages of maximum dry density and at a moisture content within the limits specified as determined by ASTM D-698:
    - a. Structural Fill: 95 percent of maximum dry density as at a moisture content within minus 3 to plus 3 percentage points of the optimum moisture content.
    - b. Non supporting Fill: 90 percent of maximum dry density as determined by ASTM D-698, at a moisture content within minus 5 to plus 5 percentage points of the optimum moisture content.

### 3.6 GEOTEXTILE PLACEMENT

- A. Two sheets of high-strength geotextile shall be installed in the lower portion of the embankment fill. One sheet shall be installed following placement of one lift of fill material above existing grade, and one sheet shall be installed 1 foot higher. The geotextile shall be oriented with the warp direction parallel to the centerline. The sheets shall extend for a width of 180 feet - 90 feet north and 90 feet south of the embankment centerline.
- B. The Geotextile delivered to the site shall remain in factory packaging capable of protecting it from sunlight (ultraviolet), moisture and other harmful elements until installation.
- C. The geotextile sheets shall be at least 130 feet long extending beneath the eastern 60 feet of the new embankment placed for the environmental restoration leaving rolls of at least 70 feet of

additional geotextile at the east embankment toe for future use. The remaining rolls shall be covered with black plastic, marked, and covered with at least 1 foot of on site fill. The rolls of geotextile shall be protected from damage after installation.

- D. At least 75 percent of the sheets placed in the embankment shall be full length (130 feet long). No more than 1 transverse joint shall be allowed in 25 percent of the sheets. Any transverse joints shall be machine sewn or lapped 15 feet. Sheets with transverse joints shall not be installed in adjacent positions. Longitudinal joints shall be lapped 2 feet.
- E. Do not allow construction equipment to traffic directly on the geotextile. Push fill over the geotextile with a loader or dozer keeping the construction equipment off the geotextile.

### 3.7 FIELD QUALITY CONTROL

#### A. Approval Of Subgrades

- 1. Notify the Engineer when excavations have reached required subgrade.
- 2. When, in the opinion of the Engineer, native subgrade soils are not suitable, remove the unsuitable material to depth as directed by the Engineer. Construct a stable subgrade to the required grade, as approved by the Engineer.
- 3. Reconstruct subgrades damaged by freezing, frost, rain, accumulated water, or construction activities, as directed by the Engineer and at no additional cost to Owner.

#### B. Compaction Testing

- 1. The Owner shall employ an approved testing agency to collect, analyze and record visual observations and/or density tests. The following number of density tests will be done:
  - a. Non-supporting Fill: One test per lift every 1,000 square yards.
  - b. Structural Fill: One test per lift every 600 square yards.
  - c. Engineer maintains the right to decrease the number of test if tests results consistently pass required densities.
- 2. Do not cover a lift of soil that has not been tested or passed a test, unless approved by the Engineer. Recompact or replace and recompact materials until acceptable test results are obtained.
- 3. Engineer may request additional compaction based on hand probes or visual evidence.

END OF SECTION 02200

**SECTION 02250  
CONTAMINATED SOIL REMOVAL**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Excavation of Petroleum-Contaminated Soil (PCS), asbestos contaminated soil, soil from the Paint Barrel Pits (PBP), lead contaminated soil from the Eighth Street Yard, and volatile organic (VOC) contaminated soil from the Acetylene Sludge Pits.
- B. Related Sections
  - 1. Section 01300 - Submittals
  - 2. Section 02200 - Earthwork

**1.2 REFERENCES**

- A. National Fire Protection Association (NFPA)
  - 1. NFPA 329: Recommended Practice for Handling Underground Leakage of Flammable and Combustible Liquids
- B. Occupational Safety and Health Administration (OSHA)
  - 1. 29 CFR 1926: Safety and Health Regulations for Construction
  - 2. 29 CFR 1910.120: Hazardous Waste Operations and Emergency Response
- C. U.S. Department of Transportation (DOT)
  - 1. 49 CFR Parts 171 through 178
- D. Nebraska Health and Human Services System
  - 1. Title 178 - Chapter 12 Regulations Governing Water Well Construction, Pump Installation and Water Well Decommissioning Standards.

**1.3 SUBMITTALS**

- A. Before starting the excavation, copies of all permits, licenses, and authorizations including, but not limited to, licenses of waste transporters and waste disposal facilities in the event the Contractor uses an alternative to the Owner selected disposal method.
- B. Before starting work, the Contractor shall submit copies of their Site Safety and Health Plan (SSHP) for review by the Engineer.
- C. Copies of completed manifests and certificates of disposal indicating quantities of the various wastes and product accepted for disposal.
- D. Copies of the design of the saturated soil staging area, as described below.

**1.4 QUALITY ASSURANCE**

- A. Employ sufficient number of skilled workmen who are trained and experienced in the necessary crafts to complete the work. Use equipment adequate in size, capacity, and numbers to accomplish the work in a safe and timely manner.
- B. Comply with Federal, State, and local government regulations.

**1.5 JOB DESCRIPTION**

- A. The project consists of five areas:
  - 1. Paint Barrel Pits
  - 2. Asbestos Area

3. PCS Area
  4. Lead Area
  5. Acetylene Sludge Pits
- B. The estimated limits of the five areas and limits of the excavations are shown on the Drawings. The Engineer will mark the limits of the excavations.
- C. The Engineer and Owner will be responsible for all soil testing and chemical analyses

## **PART 2 PRODUCTS [NOT USED]**

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

- A. Prior to the start of construction, communicate with the local representatives of utilities companies including, but not limited to, oil, gas, telephone, communications, water, and sewer. Seek assistance in locating existing facilities to avoid conflicts during construction. The location and type of utilities that may be present in the area are not completely shown on the Drawings.
- B. Provide and maintain barricades with warning lights during excavation activities until excavation is backfilled.
- C. Take all necessary precautions to assure no damage occurs to existing structures or appurtenances that may be affected by work activities. Any damage resulting from the Contractor's operations shall be repaired at no expense to the Owner.

### **3.2 EQUIPMENT**

- A. Excavation equipment to be adequate capacity and size for contaminated soil removal. The use of suitable excavation machinery is permitted except in places where such operations may cause damage above or below ground, in which case, employ hand methods.
- B. Contractor may be required to use extended reach equipment, or construct an earthen loading ramp to facilitate loading of high sided gondola cars. The height from top of rail to the top of the car side can be a maximum of 13.5 feet.
- C. Compaction equipment to be suitable type and adequate capacity and size to obtain specified densities.
- D. Operate equipment in accordance with manufacturer's instructions.

### **3.3 CONTAMINATED SOIL REMOVAL AND DISPOSAL**

- A. General
  1. Protect active water supply lines to prevent interruption of service. Notify the Engineer immediately if service is interrupted. Immediately restore utility service by repairing damaged utility at no additional cost to the Owner.
  2. Clean up spills in accordance with applicable API, NFPA, and OSHA standards.
  3. Hazardous materials, as determined by the Engineer, shall be stockpiled separately within the soil staging area.
- B. Site Preparation
  1. Clear excavation sites of trees, roots, brush, tree trimmings, and other objectionable materials and debris. Designate non-contaminated materials not salvaged for reuse on-site as spoiled and dispose of material in accordance with State and local requirements.
  2. Contractor shall remove all concrete slabs and foundations in the excavation areas. Stockpile all concrete in the concrete stockpile as shown on the drawings. All concrete shall be decontaminated to remove gross contamination prior to stockpiling.

3. Contractor shall stockpile all other non-contaminated debris in the miscellaneous debris stockpile as shown on the drawings.
4. Contractor shall construct a saturated soil staging area in the area shown on the Drawings. The saturated soil staging area will be separate from the general soil staging area and will be used to dry saturated soil prior to placement in gondola cars or other means of disposal. The saturated soil staging area will be a bermed and lined (with 20-mil plastic sheeting) area. The bottom of the area will slope to a point to facilitate collection of water from the saturated soil. Contractor shall collect the water and transfer to the PCS dewatering storage tanks.

C. Excavation

1. Excavation includes soil materials primarily comprised of sand, silty sand, and silty clay. Excavation includes removal and subsequent handling of materials excavated or otherwise handled in the performance of the work.

D. Paint Barrel Pits Excavation and Soil Stockpiles

1. The northern half of the eastern pit (as shown on the Drawings) shall be excavated first and stockpiled on plastic sheeting adjacent to the pits. This soil will be sampled by the Engineer and analyzed for TCLP lead. Depending upon the results of the chemical analysis, the soil may require stabilization with lime or fly ash at the direction of the Engineer.
2. If the soil stockpile adjacent to the pits fails TCLP, the Contractor shall stabilize the soil with Type C fly ash to a final mixture of 20% by weight.
3. Once stabilized and sampled to confirm passing TCLP results, the soil will be transported to the soil staging area to be loaded into gondola cars for disposal.
4. The soil from the remainder of the pits shall be excavated and can be immediately transported to the soil staging area for subsequent loading into gondola cars.
5. The Engineer shall sample the sides of the excavation and may direct additional excavation based upon confirmatory analytical results.
6. The Contractor shall maintain a construction fence around the perimeter of the excavation at all times. The fence shall consist of driven metal posts and chain-link fabric and shall be six feet tall.

E. Asbestos Area Excavations and Soil Stockpiles

1. Soil to be excavated shall be sufficiently wetted with clean water prior to excavation and during storage to control dust.
2. Three areas (as shown on Drawings) shall be excavated to a depth of one foot.
3. Two additional areas (as shown on the Drawings) shall be excavated to a depth of three feet. The soil from the uppermost one and a half feet shall be considered "clean" and shall be stockpiled adjacent to the excavation. The remaining soil shall be excavated as outlined below.
4. The "clean" soil shall be used as backfill, in accordance with Section 2200. This soil shall be placed in the bottom of the excavations, and imported fill material shall be used to bring the excavations to final grade.
5. Soil shall be placed in drums, bags, or other Engineer approved containers suitable for the transportation of asbestos containing material (ACM). If the contractor chooses to stage the contaminated soil prior to loading into containers, the location shall be approved by the Engineer and the soil will be sufficiently wetted and covered with plastic sheeting.
6. The Contractor shall transport the soil, according to DOT and EPA regulations, to Butler County or Douglas County Landfill for disposal.

7. The Engineer will direct additional excavation to remove contaminated soil, if necessary, based on results of confirmatory soil testing.
8. The contractor shall clearly mark the limits of the excavation with caution tape or temporary reflective fence while waiting for confirmation sample analysis.

F. PCS Excavation and Soil Stockpiles

1. Owner shall remove all fence posts and building appurtenances prior to start of work. All other site preparation shall be by Contractor as per above.
2. Excavate in a manner that will limit the amount of potentially contaminated soil that could be mixed with uncontaminated soil.
3. Contractor shall expose 4-inch oil pipeline (as shown on Drawings) without damaging it. Once oil pipeline is exposed throughout the entire excavation, Contractor shall cut the oil line at each end. Contractor shall collect all liquid from within the pipeline and dispose of accordingly. Contractor shall attempt to remove the oil pipeline between the excavations by pulling on the pipeline from the excavation. Once the line is drained and an attempt made to remove the pipeline between the excavation, the contractor shall seal the remaining ends with grout.
4. Contractor shall demolish existing 42-inch and 44-inch sewers (as shown on the Drawings) within the excavation limits. Debris shall be stockpiled in the miscellaneous debris stockpile. Contractor shall seal the sewer with flowable grout, as per City of Omaha Public Works standards, approximately 20 feet west of the manhole shown on the Drawings.
5. Contractor shall demolish the OPPD utility conduit (as shown on the drawings). Concrete shall be stockpiled in the concrete debris stock pile and all other debris shall be stockpiled in the miscellaneous debris pile.
6. Contractor shall cut off monitoring well and/or recovery well casings, within the excavation limits, 14-feet below ground surface. The remaining casing shall be removed. If the remaining casing can not be removed, the casing shall be filled with grout.
7. During excavation, the Engineer will collect immunoassay samples to evaluate potential for soil contamination. Stockpile uncontaminated excavated soil which meets backfill requirements next to the excavation. Stockpile potentially contaminated soil in the soil staging area and cover with plastic.
8. The Engineer will collect soil samples from the potentially contaminated soil stockpile and from the limits of the excavation. Turnaround time between sampling and test reports is expected to be 48 hours. If test results indicate contaminant levels exceed project performance standards, the soil shall be loaded in gondola cars and sent off-site disposal. The Owner will pay transportation and disposal costs.
9. The PCS area excavation will take place in two phases. Phase I consists of the areas between 25 feet west of the existing coal track bottom of ties to the west. Once the existing coal track has been removed, Phase II will be completed for the remainder of the excavation limits to within 15 feet west of the existing service road.
10. The Engineer will direct additional excavation to remove contaminated soil, if necessary, based on results of confirmatory soil testing.
11. The Phase I excavation shall be left open for a minimum of four weeks to allow for free-phase product recovery. The Contractor will only backfill after notification by the Engineer.
12. All excavation sideslopes must conform to safety requirements specified by Federal, State, and local government regulations.
13. Contractor shall maintain 15 feet of ground clearance around the northbound Abbott Drive piers and the limits of the excavation. The 15 feet of clearance will also be maintained

around the southbound Abbott Drive piers until the lanes are closed. The Contractor will be allowed to excavate up to the southbound Abbott Drive piers once the lanes are closed.

14. The Contractor shall maintain a construction fence around the perimeter of the excavation(s) at all times. The fence shall consist of driven metal posts and chain-link fabric and shall be six feet tall.

G. Lead Area Excavation

1. Excavate to a depth of one foot. Additional deep excavations, up to 10 feet, may be required at the direction of the Engineer. Deep excavations may be necessary pending final location of new sewers in the excavation area and whether the final sewer alignments intersect areas with subsurface lead contamination.
2. The Contractor shall strip off the top three inches of soil, containing organic matter, and stock pile adjacent to the embankment fill area. The topsoil stockpile area will be determined by the Engineer/Owner. The topsoil will be subsequently placed within the toe of the embankment at the direction of the Engineer.
3. Excavated lead contaminated soil shall be placed in the proposed Abbott Drive/Cuming Street roadway embankment as shown on the Drawings and backfilled in accordance with Section 02200.
4. The Engineer will direct additional excavation to remove contaminated soil, if necessary, based on results of confirmatory soil testing.

H. Acetylene Sludge Pits

1. Contractor shall continuously monitor breathing zone and shall upgrade to Level C PPE in accordance with the SSHP.
2. Contractor shall excavate the sludge pit material, including the existing containment berms to a depth equal to the surrounding grade or to native soil, as determined by the Engineer.
3. The Contractor shall transport the acetylene sludge pit material to the soil staging area at the South end of the property and subsequently load into gondolas and/or railcar containers for shipment to the disposal facility. The Contractor shall insure that the cars/containers are loaded properly and prepared for shipment according to all State and Federal regulations.
4. Trucks and/or other equipment used to transport the soil to the soil staging area shall be enclosed sufficiently to not allow material to spill and shall be covered with a tarp during transportation.
5. All material from the acetylene sludge pits will be segregated from other materials within the soil staging area and covered with plastic while waiting to be loaded into gondolas/containers.
6. The Engineer will direct additional excavation to remove contaminated soil, if necessary, based on results of confirmatory soil testing.

I. Waste Disposal

1. The Contractor, where applicable, shall transport and dispose of waste in accordance with Federal, State, and local laws and regulations.
2. Engineer will complete all sampling to profile waste materials for manifesting and disposal approval prior to starting work. Contractor shall properly manifest each load of asbestos material transported off site for disposal.
3. The Contractor shall prepare a certificate of disposal for all waste materials transported off-site by the Contractor.

J. Backfill

1. If the excavation reaches depths below pre-acetylene sludge pits grades, the Contractor, upon notification from Engineer shall backfill the excavation in accordance with Section 02200.

3.4 SITE RESTORATION

- A. At completion of work at each location, with the exception of the lead excavation, remove equipment, unused materials, temporary facilities, debris, and miscellaneous items resulting from or used during construction. Restore all areas as directed by the Engineer and the Paint Barrel Pit and the two small Asbestos areas as nearly as possible to original condition.
- B. The lead excavation shall be left open. In areas where the excavation depths exceed three feet, the Contractor shall backfill the excavation as per Section 2200 for the backfill classification as directed by the Engineer.

END OF SECTION 02250

**SECTION 02260  
LEAD HAZARD ABATEMENT AND DISPOSAL**

**PART 1 GENERAL**

**1.1 SUMMARY**

**A. Section includes:**

1. Requirements for removal of the upper 12-inches of lead-containing soil and debris from the area shown on the Drawings, followed by hauling and disposal on-site as per Sections 02250 and 02200.
2. Requirements for worker and general public health and safety during activities that disturb lead-containing soil and debris.

**B. This specification reflects site specific applicability and responsibilities with respect to compliance with 29 CFR 1926.62, the OSHA Construction Standard for lead, which became effective 3 June, 1993. The transportation, disposal, storage, or containment of lead or materials containing lead on the site or location where construction activities are performed necessitates compliance with 29 CFR 1926.62.**

**C. Related Sections**

1. Section 01300 - Submittals
2. Section 02200 - Earthwork
3. Section 02250 - Contaminated Soil Removal

**1.2 REFERENCES**

**A. Lead Hazard Abatement Plan (LHAP)**

1. The Engineer shall review the LHAP, which will be prepared by the Contractor. The LHAP identifies the work procedures, health, and safety measures to be used in lead hazard abatement. The plan will include the following key elements:
  - a. Location of lead containing components keyed to project drawings.
  - b. Hazard abatement methods for each lead containing waste stream.
  - c. Training requirements as required by Federal, state, and local regulations.
  - d. Unique problems associated with the lead hazard abatement project.
  - e. Sketch of lead control areas and decontamination areas.
  - f. Eating, drinking, smoking, and rest room procedures.
  - g. Sequencing of lead related work.
  - h. Personnel protective equipment, respiratory protection program and controls.
  - i. Engineering controls, containment structures and safety measures.
  - j. Worker exposure assessment procedures.
  - k. Work practice controls.
  - l. Housekeeping.
  - m. Hygiene facilities and practice.
  - n. Medical surveillance, including medical removal protection.
  - o. Sampling, testing and analytical methods to include personnel air sampling requirements of 29 CFR 1926 Section .62, environmental air sampling, and TCLP of

waste material in accordance with 40 CFR 261. Procedures will include frequency, locations, and sampling and analytical methods to be used.

B. Code Of Federal Regulations (CFR)

1. 29 CFR 1910 Occupational Safety and Health Standards
2. 29 CFR 1926 Safety and Health Regulations for Construction
3. 49 CFR 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
4. 49 CFR 178 Specifications for Packagings

C. National Fire Protection Association (NFPA)

1. NFPA 701 Methods of Fire Test for Flame-Resistant Textiles and Films

D. National Institute for Occupational Safety And Health (NIOSH)

1. NIOSH OSHA Booklet 3142 Lead in Construction

E. Underwriters Laboratories (UL)

1. UL 586 High-Efficiency, Particulate, Air Filter Units

1.3 SUBMITTALS

- A. Copies of licenses, permits, and worker training and medical certificates as required by applicable Federal, state, and local regulations shall be obtained at least 20 days before the start of the lead hazard abatement project.
- B. Location of proposed construction debris landfill, along with landfill's permits, for approval by the Engineer.

1.4 COORDINATION WITH OTHER WORK

- A. Abatement and disposal work shall be coordinated with existing work and/or concurrent work being performed in adjacent areas.

1.5 SAFETY AND HEALTH REGULATORY REQUIREMENTS

- A. Work shall be performed in accordance with requirements of 29 CFR 1926, especially Section .62. Matters of interpretation of the standards shall be submitted to the appropriate agency for resolution before starting work. Where these requirements vary, the most stringent shall apply.

1.6 RESPIRATORY PROTECTION PROGRAM

- A. A respiratory protection program shall be established as required by 29 CFR 1926 Section .103 and .62 and in accordance with 29 CFR 1910 Section .134. An approved respirator shall be furnished to each employee and visitor required to enter a lead work control area. A fit test shall be conducted in accordance with 29 CFR 1926 Section .62, Appendix D.

1.7 HAZARD COMMUNICATION PROGRAM

- A. A Hazard Communication Program shall be implemented in accordance with 29 CFR 1926 Section .59.

1.8 SAFETY AND HEALTH OVERSIGHT

- A. The Contractor's Competent Person shall be the onsite person responsible for coordination, safety, security and execution of the work. The Contractor's Competent Person shall be able to identify existing and predictable lead hazards and shall have the authority to take corrective measures to eliminate them.

## 1.9 TRAINED AND COMPETENT PERSONNEL

- A. Work shall be performed by competent persons, qualified and trained in the abatement, monitoring, testing, storage, treatment, hauling, and disposal of contaminated lead debris material, and in subsequent cleanup of the affected environment. Workers shall comply with the appropriate Federal, state, and local regulations which mandate training requirements and work practices, and shall be capable of performing the work under this contract.
- B. Prior to the commencement of work, each worker shall be instructed by the Contractor's Competent Person as to site specific project requirements.

## 1.10 POSTED WARNINGS AND NOTICES

- A. The following regulations, warnings, and notices shall be posted at the work site in accordance with 29 CFR 1926 Section .62.
- B. Warning Signs and Labels

- 1. Warning signs shall be provided at approaches to lead control areas. Signs shall be located at a distance from the lead control areas that shall allow personnel to read the sign and take the necessary protective actions required before entering the lead control area.
- 2. Warning signs shall be of sufficient size to be clearly legible and display the following:

WARNING  
LEAD WORK AREA  
POISON  
NO SMOKING OR EATING  
AUTHORIZED PERSONNEL ONLY  
PROTECTIVE CLOTHING REQUIRED IN THIS AREA

- 3. Warning labels shall be of sufficient size to be clearly legible and display the following:

CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT  
REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD  
CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE  
FEDERAL, STATE OR LOCAL REGULATIONS.

- C. Worker Information
  - 1. Right-to-know notices shall be placed in clearly visible areas of the work site in compliance with Federal, state, and local regulations.
- D. Air Monitoring Results
  - 1. Daily air monitoring results shall be prepared so as to be easily understood by the workers, and shall be placed in a clearly visible area of the work site.
- E. Emergency Telephone Numbers
  - 1. A list of telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, emergency squad, police and fire departments, the Engineer, Contractor representatives who can be reached 24 hours per day, and professional consultants directly involved in the project.

## 1.11 EQUIPMENT AND MATERIALS

- A. Sufficient quantities of health and safety materials required by 29 CFR 1926 Section .62, and other materials and equipment needed to complete the project, shall be available and kept on the site.
- B. Respirators
  - 1. Respirators shall comply with the requirements of 29 CFR 1926 Section .62 and shall be used in accordance with 29 CFR 1926 Section .103 and 29 CFR 1910 Section .134.

2. Personnel who handle lead construction debris, enter lead regulated work areas that require the wearing of a respirator, or who are otherwise carrying out lead demolition activities that require the wearing of a respirator, shall be provided with approved respirators that are fully protective of the worker at the measured or anticipated airborne lead concentration level to be encountered.
3. The upgrading or downgrading of respirator type, from the minimum requirements specified for start-up, shall be made by the Contractor's Competent Person based on the measured or anticipated airborne lead particulate concentrations to be encountered. All recommendations made by the Contractor's Competent Person to downgrade or upgrade respirator type shall be submitted in writing to the Engineer for acceptance.

C. Respirator Cartridges

1. A sufficient supply of respirator cartridges shall be maintained at the work site to provide new cartridges to employees, authorized visitors, and the Engineer personnel throughout the duration of the project.
2. For air-purifying respirators, the particulate filter portion of the cartridges or canister approved for use in airborne lead environments shall be Type H, high-efficiency particulate air (HEPA). As a minimum a half-mask air-purifying respirator shall be worn during the startup of activities.
3. Cartridges or canisters shall be disposed of at the conclusion of each work shift. When wet decon is used, cartridges or canisters shall be disposed of during each decon activity. Any change in disposal frequency and the decision logic for this change shall be provided by the Contractor's Competent Person in writing for approval by the Engineer.

D. Protective Clothing

1. The Contractor shall furnish, at no cost to personnel, equipment/clothing for protection from airborne and waterborne lead debris. An adequate supply of these items shall be available for worker, authorized visitor, and the Owner/Engineer's personnel use. Workers and visitors shall not take protective clothing and equipment off the work site at any time. Protective clothing includes:
  - a. Coveralls (Whole Body Protective Coverings): Full-body coveralls and head covers shall be worn by workers in the work area. Sleeves shall be secured at the wrist and pants legs at the ankle with tape. Permeable clothing shall be provided in heat-stress conditions. Where non-disposable coveralls are provided, these coveralls shall be cleaned after each wearing. Cleaning of coveralls and other non-disposable clothing shall be in accordance with the provisions for cleaning in 29 CFR 1926 Section .62.
  - b. Boots: Deconnable work boots with nonskid soles or impermeable work boot covers over leather work boots shall be worn by workers.
  - c. Gloves: Disposable outer work gloves shall be provided to each worker and shall be worn while the worker is in the work area. Gloves shall not be removed from the work area, and shall be disposed of as lead contaminated waste at the end of the work.
  - d. Hard Hats: Head protection (hard hats) shall be provided as required by OSHA and 29 CFR 1926 for workers and authorized visitors. Protective plastic strap suspension hats shall be used. Hard hats shall be worn at all times that work is in progress. Hats shall remain in the work area until the project is completed. Hats shall be thoroughly cleaned, decontaminated, and bagged before being removed from the work area at the end of the project.
  - e. Eye Protection: Fog-proof goggles for personnel engaged in lead abatement operations shall be worn when the use of a full face piece respirator is not required.
  - f. Work Clothing: Cloth work clothes shall be provided for wearing under the disposable protective coveralls and foot coverings.

E. Expendable Supplies

1. Impermeable containers shall be used to receive and retain lead contaminated Personnel Protective Equipment (PPE) until disposal. Containers shall be labeled in accordance with EPA, DOT and OSHA standards.
2. Chemicals shall be properly labeled and stored in leak-tight containers.

1.12 STORAGE OF MATERIALS

- A. Materials shall be stored in a place and manner that protects them from damage and contamination. During periods of cold weather, plastic materials shall be protected from the cold. No flammable or hazardous materials shall be stored inside any building. Regularly inspect materials to identify damaged or deteriorating items. Damaged or deteriorated items shall not be used and shall be removed from the site as soon as they are discovered. Any materials which become contaminated with lead waste shall be disposed of consistent with the requirements of 40 CFR 148 and these specifications. Stored materials shall not present a hazard or an inconvenience to workers, visitors, and/or other occupants and employees of the building.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

3.1 PERSONNEL HEALTH AND SAFETY

A. Personnel Air Sampling

1. Personnel air monitoring sampling and analysis of airborne of lead particulates shall be performed by the Contractor in accordance with CFR 29 Part 1926 Section 1926.1101 and Section 1926.62, the LHAP, and as specified herein.
2. Personnel air monitoring samples shall be taken for at least 25 percent of the workers in each shift or a minimum of two, whichever is greater. Results of the personnel samples shall be posted at the job site and made available to the Engineer.
3. Airborne concentrations shall be reported in micrograms per cubic meter ( $\text{mg}/\text{m}^3$ ) of air. The Contractor's Competent Person shall use personnel air monitoring results to determine the effectiveness of engineering controls, the adequacy of PPE and to determine if proper work practices are being employed. The Engineer shall be notified if any personnel air monitoring result equals or exceeds  $0.03 \text{ mg}/\text{m}^3$  of air. The Contractor shall take steps to reduce the concentration of lead in the air.
4. Notification Requirements
  - a. The Contractor shall maintain a particulate concentration inside the regulated work area equal to or less than  $0.03 \text{ mg}/\text{m}^3$  expressed as an 8 hour, Time-Weighted Average (TWA) during the conduct of the lead abatement work.
    - (a) If particulate concentration rises above  $0.03 \text{ mg}/\text{m}^3$ , work procedures shall be investigated with the Engineer to determine the cause.
    - (b) At the discretion of the Engineer, particulate concentration may exceed  $0.03 \text{ mg}/\text{m}^3$  with the use of respiratory protection.
    - (c) The Contractor's workers shall not be exposed to an airborne particulate concentration in excess of  $0.3 \text{ mg}/\text{m}^3$  when working in the lead regulated work area with  $\frac{1}{2}$  face air purifying respirators.
    - (d) The Contractor's workers shall not be exposed to an airborne particulate concentration in excess of  $0.6 \text{ mg}/\text{m}^3$  when working in the lead regulated work area with full face air purifying respirators.

5. Exposure Determination

- a. Each Contractor who has a workplace or operation covered by CFR 29 Part 1926 Section 1926.1101 and Section 1926.62 shall initially determine if any employee may be exposed to lead at or above the Action Level ( $0.03 \text{ mg/m}^3$ ). Such workplaces are:
  - (a) Where removal of lead-containing soil is occurring.
  - (b) Where the Contractor has any reason to believe that an employee performing the task may be exposed to lead in excess of the Permissible Exposure Limit (PEL), until the Contractor performs an employee exposure assessment.
- b. Employee exposure is that exposure that would occur if the employee were not using a respirator.
- c. Until the Contractor performs an employee exposure assessment and documents that the employee is not exposed above the PEL, the Contractor shall treat the employee as if the employee were exposed above the PEL and shall implement employee protective measures:
  - (a) Appropriate respiratory protection
  - (b) Appropriate PPE
  - (c) Change areas
  - (d) Hand washing facilities
  - (e) Biological monitoring, to consist of blood sampling and analysis for lead and Zinc Proto Porphyrin (ZPP) levels, and
  - (f) Collect personnel air monitoring samples representative of a full shift, including at least one sample for each job classification in each work area either for each shift or for the shift with the highest exposure level. Full shift personnel samples shall be representative of the monitored employee's regular, daily exposure to lead.

6. Initial Determination

- a. Each Contractor who has a workplace or work operation covered by this standard shall monitor employee exposures and shall base initial determinations on the employee exposure monitoring results and any of the following, relevant considerations:
  - (a) Any information, observations, or calculations which would indicate employee exposure to lead;
  - (b) Any previous measurements of airborne lead; and
  - (c) Any employee complaints of symptoms which may be attributable to exposure to lead
- b. Monitoring for the initial determination may be limited to a representative sample of the exposed employees who the Contractor reasonably believes are exposed to the greatest airborne concentrations of lead in the workplace.

7. Negative Initial Determination

- a. The Contractor shall make a written record of such determination, "No employee is exposed to airborne concentrations of lead at or above the Action Level ( $0.03 \text{ mg/m}^3$ )" including:
  - (a) Date of determination
  - (b) Location within the worksite

- (c) Name and social security number of each employee monitored
- (d) All initial determination exposure monitoring results
- b. A negative initial determination shall require two (2) full working days of samples with each sampling run a minimum of four (4) hours. It is anticipated that the duration of initial determination will be 3 working days.

8. Additional Monitoring

- a. Additional monitoring shall be required whenever:
  - (a) Contractor has any reason to suspect that a change may result in new or additional exposures above the Action Level ( $0.03 \text{ mg/m}^3$ ).
  - (b) Change has occurred in the following:
    - (i) Equipment
    - (ii) Production
    - (iii) Process
    - (iv) Control equipment
    - (v) Work practices
    - (vi) Personnel

9. Employee Notification.

- a. Within 5 working days after the receipt of monitoring results, the employer shall notify each employee in writing of the results that represent that employee's exposure. Whenever the results indicate that the representative employee exposure, without regard to respirators, exceeds the PEL ( $0.05 \text{ mg/m}^3$ ); the employer shall include in the written notice:
  - (a) Statement that the PEL was exceeded
  - (b) Description of the corrective action(s)

B. Personnel Protection Procedures

- 1. Personnel shall wear and use protective clothing and equipment as specified. Eating, smoking, drinking, chewing tobacco and chewing gum, and applying makeup shall not be permitted in the lead control area. Personnel of trades not engaged in the hazard abatement and disposal of lead shall not be exposed at any time to airborne concentrations of lead equal to or in excess of  $0.03 \text{ mg/m}^3$  of air.

C. Safety and Health Responsibilities

- 1. The Contractor's Competent Person shall be present on the work site throughout the abatement project to supervise, monitor, and document the Contractor's health and safety provisions. A daily log shall be maintained showing the results of personnel air sampling.
- 2. The Contractor's Competent Person shall:
  - a. Direct personnel air monitoring.
  - b. Verify that training meets applicable requirements.
  - c. Review the LHAP to ensure Contractor's methods conform.
  - d. Ensure that worker exposure air monitoring activities are in accordance with 29 CFR 1926 Section .62.
  - e. Ensure work is performed in strict accordance with specifications.

- f. Ensure hazardous exposure to personnel and to the environment are adequately controlled.

D. Medical Surveillance Procedures

1. Medical surveillance shall be implemented in accordance with the LHAP, and shall comply with the requirements of 29 CFR 1926 Section .62, including the provisions for biological monitoring, medical removal protection and a physician's written opinion, signed by the physician performing the employee examination. The Contractor shall provide a copy of the written opinion for Contractor's employees 2 days prior to each employee's commencement of work.
2. Before being exposed to lead particulate, workers shall be provided with a comprehensive medical examination as required by CFR 29 Part 1926, Section 1926.1101 and Section 1926.62, and other pertinent State of Nebraska requirements. These requirements are that:
  - a. Initial medical surveillance shall be provided to employees occupationally exposed on any day to lead at or above the Action Level ( $0.03 \text{ mg/m}^3$ ). Initial medical surveillance consists of biological monitoring in the form of blood sampling and analysis for lead and Zinc Proto Porphyrin (ZPP) levels
  - b. Medical surveillance programs are required for all employees who are or may be exposed by the employer at or above the Action Level ( $0.03 \text{ mg/m}^3$ ) for more than 30 days in any consecutive 12 months
3. In order to provide information pre-exposure on this site, Contractors shall assume exposure at or above the Action Level ( $0.03 \text{ mg/m}^3$ ), until air monitoring proves otherwise. Consequently, initial monitoring shall be required for all workers engaged in work within the lead-regulated area. Post site work monitoring shall also be required, with the same medical tests used throughout medical monitoring intervals.

E. Medical and Exposure Records

1. Complete and accurate records shall be maintained of each employee's medical examinations, medical records and exposure data as required by CFR 29 Part 1926, Section 1926.62 for a period of 30 years after termination of employment. Records of the required medical examinations and exposure data shall be made available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health (OSHA) or authorized representatives of the employee and an employee's physician upon request of the employee or former employee.

F. Personnel and Equipment Decontamination Procedures

1. No clothing or equipment contaminated with lead particulate shall be removed from site without adequate decontamination.
2. An operational washing station shall be provided for personnel decontamination. Workers shall wash before exiting the site. Water used shall be containerized for off-site disposal.
3. The Equipment Decontamination Area shall be used for removal of equipment and materials from the lead control area and shall include a wash area. Workers shall not enter or exit the lead control area through the Equipment Decontamination Area.
4. Lead Control Area Exiting Procedures
  - a. Personnel exiting a lead control area shall perform the following procedures and shall not leave the work place wearing any clothing or equipment worn during the work day:
    - (a) Remove protective clothing and place this clothing in an approved impermeable disposal bag.
    - (b) Wash.

- (c) Change to clean clothes prior to leaving the physical boundary designated around the lead-contaminated work site.

### 3.2 WORK PROCEDURES

- A. Lead abatement and related work shall be performed in accordance with the LHAP. Procedures and equipment required to limit occupational and environmental exposures to lead during lead hazard abatement shall be in accordance with 29 CFR 1926 Section .62, and as specified herein.
- B. Engineering Controls and Containment Structures
  - 1. Lead Control Area
    - a. The lead control area is where lead hazard abatement work occurs and as such shall be considered contaminated.
  - 2. Boundary Requirements
    - a. Physical boundaries shall be provided around exterior lead control areas by fencing off the area. If the work area has controlled access and only designated contractor or Owner/Engineering personnel are allowed access, then the controlled (fenced) area can be considered the lead control area and will not require a roped off perimeter around each structure.

### 3.3 AREA MONITORING

- A. The Engineer shall provide all air monitoring equipment.
- B. Area air monitoring shall be completed during the abatement work by the Engineer.
  - 1. Airborne concentrations of lead shall be collected and analyzed in accordance with 29 CFR 1926 Section .62. The analytical results of the area air monitoring shall be reported by the laboratory within 48 hours after completion of the sampling. Results shall be reported in  $\text{mg}/\text{m}^3$  of air.
  - 2. Preabatement samples shall be collected immediately outside the lead abatement area at the following locations:
    - a. One upwind of the lead control area.
    - b. Two downwind of the lead control area.
  - 3. Air samples shall be collected on a daily basis during abatement activities. The samples shall be collected at the following locations:
    - a. Immediately upwind of the lead control area.
    - b. Immediately downwind of the work area.
- C. Excessive Levels
  - 1. Outdoor lead hazard abatement shall cease and the Engineer shall be notified if measured airborne lead concentrations, collected during hazard abatement, exceed the preabatement airborne concentration levels. The Contractor shall correct the work practices and/or engineering controls and shall resume hazard abatement at the direction of the Engineer.
  - 2. The Contractor shall stop work immediately and notify the Engineer should either
    - a. Visible dust is observed migrating from the lead control area and beyond the perimeter fence.
    - b. An environmental concentration of  $0.3 \text{ mg}/\text{m}^3$  expressed as an 8-hour TWA outside of the lead regulated demolition area, or

- c. A personnel excursion concentration of  $0.3 \text{ mg/m}^3$  expressed as an 8-hour TWA inside the lead regulated demolition area when respirators are not being worn.
  - 3. The Contractor shall then implement additional engineering controls and work practice controls to reduce airborne particulate levels below these prescribed limits in the work area. Work shall not restart until authorized by the Engineer.
- D. Soil Sampling
  - 1. Preabatement
    - a. URS Greiner Woodward Clyde has previously collected soil samples to establish baseline lead-in-soil conditions. Based on this baseline testing, 12-inches of soil shall be removed as lead containing soil.
  - 2. Post Hazard Abatement
    - a. URS Greiner Woodward Clyde will collect several post hazard abatement soil samples after:
      - (a) The initial 12-inches of lead-containing soil and debris has been removed.
    - b. Additional removal of lead-containing soils shall be completed only as directed by the Engineer, based on soil sample results.

#### 3.4 PROTECTION OF ADJACENT AREAS

- A. Abatement, storage, transportation, and disposal work shall be performed without damaging or contaminating adjacent work and areas. Where such work or areas are damaged or contaminated, the Contractor shall restore work and areas to the original condition as approved by the Engineer.

#### 3.5 CLEANUP AND DISPOSAL

- A. Daily Cleanup
  - 1. Spread of dust and debris shall be restricted. Waste shall not be distributed over the work area.
  - 2. All concrete, asphalt, piping, etc., which is removed from the excavation shall be washed prior to placement in the appropriate stockpile to remove any soil which may be contaminated.
- B. Prior to Clearance
  - 1. Upon completion of the lead hazard abatement and a satisfactory visual inspection by URS Greiner Woodward Clyde in a given work area, a preliminary clean-up shall be performed by the Contractor. This clean-up includes removal of any contaminated material, equipment or debris from the work area.
    - a. Cleaning Equipment. The Contractor shall prepare and use detergents containing five to ten percent TSP or other equally effective cleaning agent which shall be used in accordance with the manufacturers instructions. The waste water from cleaning shall be contained and disposed of according to applicable Federal, state, county and local regulations and guidelines. The wastewater shall not be disposed of in storm sewers or sanitary sewers without the Owners written approval.

END OF SECTION 02260

**SECTION 02270**  
**ASBESTOS HAZARD ABATEMENT AND DISPOSAL**

**PART 1 GENERAL**

**1.1 SUMMARY OF WORK**

- A. This specification includes:
  - 1. Requirements for removal of asbestos-containing soil from the areas and depths shown on the Drawings followed by hauling and disposal as per Sections 02070 and 02200.
  - 2. Requirements for worker and general public health and safety during activities that disturb asbestos-containing soil.
- B. Following the removal of asbestos-containing soil, the site shall be covered with clean fill as specified in Section 02200 and 02250 and shown on the Drawings. Dust suppression and control specified herein shall be employed until an initial cover of clean fill material has been placed.
- C. Related Sections
  - 1. Section 01300 - Submittals
  - 2. Section 02200 - Earthwork
  - 3. Section 02250 - Contaminated Soil Removal

**1.2 REFERENCES**

- A. American National Standards Institute (ANSI)
  - 1. ANSI Z87.1 Occupational and Educational Eye and Face Protection
  - 2. ANSI Z88.2 Practices for Respiratory Protection
- B. American Society of Testing Materials (ASTM)
  - 1. ASTM D 4397 Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
  - 2. ASTM E 1368 Visual Inspection of Asbestos Abatement/Demolition Projects
- C. Code Of Federal Regulations (CFR)
  - 1. 29 CFR 1910 Occupational Safety and Health Standards
  - 2. 29 CFR 1926 Safety and Health Regulations for Construction
  - 3. 29 CFR 1926 Section 1101
  - 4. 40 CFR 61 National Emissions Standards for Hazardous Air Pollutants
  - 5. 40 CFR 763 Asbestos
  - 6. 49 CFR 171 Hazardous Substances
  - 7. 49 CFR 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
  - 8. 49 CFR 173 Shippers - General Requirements for Subpart M Shipments and Packaging
- D. Environmental Protection Agency (EPA)
  - 1. EPA 340/1-90-018 Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance
  - 2. EPA 340/1-90-019 Asbestos/NESHAP Adequately Wet Guidance
- E. National Fire Protection Association
  - 1. NFPA 10 Standard for Portable Fire Extinguishers

2. NFPA 70 National Electrical Code
3. NFPA 90A Standards for the Installation of Air Conditioning and Ventilation Systems
4. NFPA 1012 Standards for Fire Officer Professional Qualifications
- F. National Institute for Occupational Safety And Health (NIOSH)
  1. NIOSH Pub No. 84-100 (1984 to current version) NIOSH Manual of Analytical Methods
- G. Underwriters Laboratories (UL)
  1. UL 586 High-Efficiency, Particulate, Air Filter Units
- H. State of Nebraska
  1. Nebraska Revised Statute 81-1504, 81-1505(1), 81-1505 (12) - Environmental Protection Act
  2. Title 129 - Department of Environmental Quality Chapter 12 - Hazardous Air Pollutants, Emission Standards
  3. Title 184 - Department of Health Chapter 1 - Rules of Practice and Procedures of the Department of Health
  4. Nebraska Revised Statute 71-6301 to 71-6317 - Asbestos Control Act
  5. Title 178 - Department of Health Chapter 22 - Regulations and Standards Governing: Asbestos Projects; Licensing of Business Entities for Asbestos Activities; Certification of Asbestos Occupations; Training and Review Courses for Asbestos Occupations; Asbestos Project Notification Requirements; Work Practices to be Followed for Asbestos Projects and Asbestos Waste Disposal

### 1.3 DEFINITIONS

- A. *Adequately Wet* means to sufficiently mix or penetrate with liquid to prevent the release of particulate. If visible emissions are observed coming from ACM, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted. In demolition activities, the term adequately wet becomes particularly important. Since asbestos concentrations in the air must be maintained below 0.1 fibers per cubic centimeter (f/cc) or background levels, as determined by air monitoring prior to work initiation, visible dust cannot be used as a marker. Thus area air monitoring during any aspects of demolition that include ACM manipulation shall be required.
- B. *Amended Water* contains a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.
- C. *Friable ACM* means any material containing more than 1 percent asbestos as determined using Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.
- D. *Non-friable ACM* means any material containing more than 1 percent asbestos as determined using Polarized Light Microscopy (PLM), that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- E. *Category I Non-friable ACM* means asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using Polarized Light Microscopy (PLM). During normal demolition using wrecking ball and dust suppression techniques, Category I Non-friable ACM can be safely removed without negative air pressure containment.

- F *Category II Non-friable ACM* means any material, excluding Category I Non-friable ACM, containing more than 1 percent asbestos as determined using Polarized Light Microscopy (PLM), that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- G *Asbestos Regulated Work Area* is an area contained and controlled either by an enclosed containment (full containment area, single or double bulkhead containment area, mini-containment area), modified containment, glove bag, or outdoor techniques. ACM operations are performed and isolated by physical boundaries to prevent the spread of ACM and control access to authorized persons. A full containment, single or double bulkhead containment area, mini-containment area, modified containment, and glove bag work area is isolated within a containment enclosure in that ACM operations are performed within negative air pressure containment. An outdoor regulated work area is not isolated within a containment enclosure, but is otherwise secured by means of physical barriers, boundary warning tape, and signage, etc., to control access by unauthorized persons.
- H *Time-Weighted Average (TWA)* is an 8-hour time weighted average of airborne concentration of fibers (longer than 5 micrometers) per cubic centimeter of air that represents the employee's 8-hour workday as determined by Appendix A of 29 CFR 1926, Section 1101. For employees working less than 6 hours, the TWA shall be calculated using the number of hours worked.

#### 1.4 SUBMITTALS

- A. Copies of licenses, permits, and worker training and medical certificates as required by applicable Federal, state, and local regulations shall be obtained at least 7 days before the start of the asbestos hazard abatement project.
- B. Location of proposed construction debris landfill, along with landfill's permits, for approval by the Engineer.

#### 1.5 COORDINATION WITH OTHER WORK

- A. Abatement and disposal work shall be coordinated with existing work and/or concurrent work being performed in adjacent areas.

#### 1.6 SAFETY AND HEALTH REGULATORY REQUIREMENTS

- A. Work shall be performed in accordance with requirements of 29 CFR 1926, especially Section .62. Matters of interpretation of the standards shall be submitted to the appropriate agency for resolution before starting work. Where these requirements vary, the most stringent shall apply.

#### 1.7 RESPIRATORY PROTECTION PROGRAM

- A. A respiratory protection program shall be established as required by 29 CFR 1926 Section .103 and .62 and in accordance with 29 CFR 1910 Section .134. An approved respirator shall be furnished to each employee and visitor required to enter a asbestos work control area. A fit test shall be conducted in accordance with 29 CFR 1926 Section .62, Appendix D.

#### 1.8 HAZARD COMMUNICATION PROGRAM

- A. A Hazard Communication Program shall be implemented in accordance with 29 CFR 1926 Section .59.

#### 1.9 SAFETY AND HEALTH COMPLIANCE

- A. In addition to detailed requirements of this design analysis, the work shall comply with applicable laws, ordinances, criteria, rules, and regulations of Federal, State of Nebraska, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials and with the applicable requirements of 29 CFR 29 1910, 29 CFR 1926, 40 CFR 61, Subpart A, and 40 CFR 61, Subpart M, NFPA 10, NFPA 70, NFPA 90A, NFPA 1012. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this design analysis, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as defined by the Engineer shall apply.

#### 1.10 TRAINED AND COMPETENT PERSONNEL

##### A. Certified Industrial Hygienist (CIH)

1. Personal and area/environmental air sampling and training plan shall be developed and conducted under the direction of a CIH experienced in asbestos Abatement/Demolition. The CIH must be currently certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene (ABIH). For the purpose of this contract, the Contractor shall retain the services of an independent CIH to oversee all contract required air monitoring. Duties of the CIH shall also include preparation or review of the Asbestos Hazard Abatement Plan (AHADP). The CIH shall seal, sign, and date the AHADP certifying that these plans comply with these design analysis and all applicable regulations.

##### B. Industrial Hygiene Technicians (IHTs)

1. Industrial Hygiene Technicians (IHTs) shall assist with activities such as air monitoring, decontamination, and safety oversight. The IHT(s) shall have:
  - a. Two (2) years working experience in the asbestos Abatement/Demolition industry
  - b. Working knowledge of applicable Federal, State of Nebraska, and local occupational safety and health regulations, and
  - c. Formal training in occupational safety and health.
  - d. Demonstrable experience in asbestos air monitoring techniques, including successful completion of NIOSH 582-Sampling and Evaluating Airborne Asbestos Dust.

- C. Prior to the commencement of work, each worker shall be instructed by the Contractor's Competent Person as to site specific project requirements.

#### 1.11 POSTED WARNINGS AND NOTICES

##### A. Warning Signs

1. Contractor shall ensure that all personnel understand the warning signs. Warning signs and tape shall be provided at the regulated boundaries and entrances to asbestos regulated work areas. Signs shall be located at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area.
2. Warning signs shall be in vertical format conforming to 29 CFR 1910, and 29 CFR 1926, minimum 20 by 14 inches and displaying the following legend in the lower panel.

| Legend                                     | Lettering                         |
|--|-----------------------------------|
| <b>Danger</b>                              | 3-inch Sans Serif Gothic or Block |
| <b>Asbestos</b>                            | 1-inch Sans Serif Gothic or Block |
| <b>Cancer and Lung Disease Hazard</b>      | 1-inch Sans Serif Gothic or Block |
| <b>Authorized Personnel Only</b>           | 1-inch Sans Serif Gothic or Block |
| <b>Respirators and Protective Clothing</b> | 1-inch Gothic                     |
| <b>Are Required in this Area</b>           | 1-inch Gothic                     |

3. Spacing between lines shall be at least equal to the height of the upper of any two lines.

##### B. WARNING LABELS

1. Warning labels shall be affixed to all asbestos disposal containers used to contain asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to requirements specified herein are acceptable. Warning labels shall conform to CFR 29 Part 1926 and shall be of sufficient size to be clearly legible displaying the following legend:

**DANGER  
CONTAINS ASBESTOS FIBERS  
AVOID CREATING DUST  
CANCER and LUNG DISEASE  
HAZARD**

C. Worker Information

1. Right-to-know notices shall be placed in clearly visible areas of the work site in compliance with Federal, state, and local regulations.

D. Air Monitoring Results

1. Daily air monitoring results shall be prepared so as to be easily understood by the workers, and shall be placed in a clearly visible area of the work site.

E. Emergency Telephone Numbers

1. A list of telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, emergency squad, police and fire departments, the Engineer, Contractor representatives who can be reached 24 hours per day, and professional consultants directly involved in the project.

1.12 EQUIPMENT AND MATERIALS

A. Rental Equipment

1. If rental equipment is to be used, written notification shall be provided to the rental agency, concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment and the steps that shall be taken to decontaminate such equipment. A written acceptance of the terms of the Contractor's notification shall be obtained from the rental agency.

B. Air Monitoring Equipment

1. The Contractor's CIH shall select and approve the air monitoring equipment to be provided and used by the Contractor for evaluation of airborne asbestos fiber concentrations. The equipment shall include, but not be limited to:
2. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to approximately 10 liters per minute when equipped with a sampling train of tubing and filter cassette.
  - a. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute when equipped with a sampling train of tubing and filter cassette, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit that shall maintain a constant flow even as filter resistance increases due to accumulation of fiber and debris on the filter surface.
  - b. Standard 25 millimeter diameter, 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with nonconductive barrels and shrink bands, to be used with low flow pumps in accordance with 29 CFR 1926, for personal air sampling.
  - c. Standard 25 millimeter diameter, 0.45 or 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with non-conductive barrels and shrink bands, to be

used with high flow pumps when conducting environmental area sampling using - NIOSH Pub No. 84-100 Methods.

3. Appropriate plastic tubing to connect the air sampling pump to the selected filter cassette.
4. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 degrees to plus 140 degrees Fahrenheit and traceable to a National Institute for Standards and Technology (NIST) primary standard.

C. Personal Protective Equipment (PPE)

1. Three complete sets of Personal Protective Equipment (PPE) shall be made available to the Owner and authorized visitors for entry to the asbestos regulated work area at all times for inspection of the asbestos regulated work area. The Owner and authorized visitors shall be provided with training equivalent to that provided to Contractor employees in the selection, fitting, and use of the required PPE and the site safety and health requirements.
2. The Contractor's CIH and designated competent person supervisor shall select and approve all the required PPE to be used. The Contractor's CIH shall evaluate on a regular basis that the PPE is being used correctly. The following listed PPE shall be initially required in all asbestos regulated areas.
3. Respirators
  - a. Respirators shall be selected and used in accordance with manufacturers recommendations, and shall be approved by the National Institute for Occupational Safety and Health (NIOSH) for use in environments containing airborne asbestos fibers. Personnel who handle ACM, enter asbestos regulated work areas that require the wearing of a respirator, or who are otherwise carrying out Abatement/Demolition activities that require the wearing of a respirator, shall be provided with approved respirators that are fully protective of the worker at the measured or anticipated airborne asbestos concentration level to be encountered.
  - b. For Air-Purifying Respirators, the particulate filter portion of the cartridges or canister approved for use in airborne asbestos environments shall be Type H, high-efficiency particulate air (HEPA). As a minimum a half-mask air-purifying respirator shall be worn during the startup of Abatement/Demolition activities.
    - (a) Cartridges or canisters shall be disposed of at the conclusion of each work shift. When wet decon is used, cartridges or canisters shall be disposed of during each decon activity. Any change in disposal frequency and the decision logic for this change shall be provided by the Contractor's CIH in writing for approval by the Engineer.
    - (b) The upgrading or downgrading of respirator type, from the minimum requirements specified for start-up, shall be made by the Contractor's CIH based on the measured or anticipated airborne asbestos fiber concentrations to be encountered. All recommendations made by the Contractor's CIH to downgrade or upgrade respirator type shall be submitted in writing to the Engineer for acceptance.
    - (c) Respiratory protection shall comply with the 29 CFR 1926, and 29 CFR 1910. A qualitative or quantitative fit test conforming to 29 CFR 1926, Section 1101, Appendix C shall be conducted by the Contractor's CIH for each Contractor worker required to wear a respirator. A respirator fit test shall be performed for each worker prior to initially wearing a respirator on this project and every 6 months thereafter. If physical changes in a worker develop that shall affect the fit, a new fit test shall be performed.
  - c. Functional fit checks in accordance with the manufacturer's recommendation shall be performed by employees each time a respirator is put on.

4. Whole Body Protection

- a. Personnel exposed to asbestos shall be provided with whole body protection and such protection shall be worn properly. The Contractor's CIH and competent person shall select and approve the whole body protection to be used. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area. Reusable whole body protection worn shall be either disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area or be properly laundered in accordance with 29 CFR 1926 and as specified in the Contractor's AHADP. Asbestos Abatement/Demolition whole body protection shall not be removed from the work site by a worker to be cleaned.
- b. Disposable-impermeable coveralls with a zipper front shall be provided. Sleeves shall be secured at the wrists, and foot coverings secured at the ankles.
- c. Cloth work clothes shall be provided for wear under the protective coverall and foot coverings when work is being conducted in low temperature conditions. Cloth work clothes shall be either disposed of as asbestos contaminated material or properly laundered in accordance with 29 CFR 1926 and as specified in the Contractor's AHADP.

5. Gloves

- a. Disposable plastic or rubber gloves shall be provided to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Where there is the potential for hand injuries (i.e., scrapes, punctures, cuts, etc.) a suitable outer glove shall be provided and used.

6. Foot Coverings

- a. If rubber boots are not used, foot wear and disposable foot coverings shall be provided. Rubber boots shall be used in moist or wet areas. Only rubber boots shall be removed from the asbestos regulated work area after being thoroughly decontaminated. All other protective foot covering shall be disposed of as ACM.

7. Head Covering

- a. Hood type disposable head covering shall be provided. In addition, protective headgear (hard hats) shall be provided as required. Hard hats shall only be removed from the asbestos regulated work area after being thoroughly decontaminated.

8. Protective Eye Wear

- a. Contact lenses shall not be worn in asbestos regulated work areas. When vision correction is necessary to perform the work task, prescription safety eyewear shall be used. Fog-proof goggles shall be worn by personnel engaged in asbestos Abatement/Demolition activities in the asbestos regulated work area when the use of a full face-piece respirator is not required. Eye protection provided shall be in accordance with ANSI Z87.1. Protective Clothing
- b. The Contractor shall furnish, at no cost to personnel, equipment/clothing for protection from airborne and waterborne asbestos debris. An adequate supply of these items shall be available for worker, authorized visitor, and the Owner/Engineer's personnel use. Workers and visitors shall not take protective clothing and equipment off the work site at any time. Protective clothing includes:
  - (a) Coveralls (Whole Body Protective Coverings): Full-body coveralls and head covers shall be worn by workers in the work area. Sleeves shall be secured at the wrist and pants legs at the ankle with tape. Permeable clothing shall be provided in heat-stress conditions. Where non-disposable coveralls are provided, these coveralls shall be cleaned after each wearing. Cleaning of

coveralls and other non-disposable clothing shall be in accordance with the provisions for cleaning in 29 CFR 1926 Section .62.

- (b) Boots: Deconnable work boots with nonskid soles or impermeable work boot covers over leather work boots shall be worn by workers.
- (c) Gloves: Disposable outer work gloves shall be provided to each worker and shall be worn while the worker is in the work area. Gloves shall not be removed from the work area, and shall be disposed of as asbestos contaminated waste at the end of the work.
- (d) Hard Hats: Head protection (hard hats) shall be provided as required by OSHA and 29 CFR 1926 for workers and authorized visitors. Protective plastic strap suspension hats shall be used. Hard hats shall be worn at all times that work is in progress. Hats shall remain in the work area until the project is completed. Hats shall be thoroughly cleaned, decontaminated, and bagged before being removed from the work area at the end of the project.
- (e) Eye Protection: Fog-proof goggles for personnel engaged in asbestos abatement operations shall be worn when the use of a full face piece respirator is not required.
- (f) Work Clothing: Cloth work clothes shall be provided for wearing under the disposable protective coveralls and foot coverings.

**D. Expendable Supplies**

- 1. Impermeable containers shall be used to receive and retain asbestos contaminated Personnel Protective Equipment (PPE) until disposal. Containers shall be labeled in accordance with EPA, DOT and OSHA standards.
- 2. Chemicals shall be properly labeled and stored in leak-tight containers.

**1.13 STORAGE OF MATERIALS**

- A. Materials shall be stored in a place and manner that protects them from damage and contamination. During periods of cold weather, plastic materials shall be protected from the cold. No flammable or hazardous materials shall be stored inside any building. Regularly inspect materials to identify damaged or deteriorating items. Damaged or deteriorated items shall not be used and shall be removed from the site as soon as they are discovered. Any materials which become contaminated with asbestos waste shall be disposed of consistent with the requirements of these specifications. Stored materials shall not present a hazard or an inconvenience to workers and/or visitors.

**PART 2 PRODUCTS (NOT APPLICABLE)**

**PART 3 EXECUTION**

**3.1 GENERAL EXECUTION REQUIREMENTS**

- A. The Contractor's CIH and competent person shall assure the following general requirements are met:
  - 1. Personnel shall wear and utilize protective clothing and equipment as discussed herein.
  - 2. Eating, smoking, drinking, or applying cosmetics shall not be permitted in the asbestos regulated work area.
  - 3. All hot work (burning, cutting, welding, etc.) shall be conducted under strictly controlled conditions in conformance with 29 CFR 1926.
  - 4. Personnel of other trades not engaged in asbestos Abatement/Demolition activities shall not be exposed at any time to airborne concentrations of asbestos unless all the administrative and personal protective provisions as required herein are complied with.

- B. The Contractor shall stop Abatement/Demolition work in the asbestos regulated work area immediately when the measured airborne total fiber concentrations:
  - 1. Equals or exceeds 0.01 f/cc or the pre-abatement/Demolition concentration, (whichever is greater) outside the asbestos regulated work area, or
  - 2. Equals or exceeds 1.0 f/cc inside the asbestos regulated work area.
- C. The Contractor shall correct the condition to the satisfaction of the Owner, including visual inspection and air samplings. Work resumption shall only be allowed upon notification by the Engineer. Corrective actions shall be documented.

### 3.2 SOIL HANDLING

- A. All soils shall be handled using engineering controls designed to minimize the airborne dispersal of dusts and fibers.
- B. Contaminated Soil Removal
  - 1. Soils shall be removed as shown on the Drawings until all remaining soil contains less than one percent (1%) asbestos by weight
  - 2. Soils with visible contamination may be either:
    - a. Screened for asbestos contamination and then segregated as regards to relative asbestos contaminant content, or
    - b. Removed in bulk with visible asbestos contaminant
  - 3. All soils shall be made wet using low pressure mists from either low pressure sprayers, mist walls or regulated hose nozzles.
  - 4. Wet soils shall be removed by either mechanical pick up and/or high volume vacuum methods using machines constructed specifically for asbestos containing soil and debris removal. Mechanical pick up shall be defined as either back hoe bucket removal, front end loader, or shoveling or a combination thereof. The Contractor will have the option to use whichever removal technique is most cost effective and timely.
    - a. Start removal at the point of work farthest from the entrance of the asbestos regulated work area.
    - b. Proceed to remove soil in a direction toward the exit of the asbestos regulated work area.
    - c. Limit traffic onto the fresh soil surface.
  - 5. Contaminated soil shall be placed in six-mil polyethylene disposal bags, lined truck beds, drums or other container as approved by the Engineer.

### 3.3 WORKER PROTECTION AND DECONTAMINATION

- A. The Contractor shall protect employees in accordance with OSHA Standard 29 CFR 1926.58, and EPA Standard 40 CFR, Part 61, Subpart M, applicable state regulations and all requirements specified as follows:
- B. Each worker and authorized visitor shall, upon entering the job site don appropriate respirator and protective clothing before entering the asbestos regulated work area.

### 3.4 DECONTAMINATION PROTOCOLS – ASBESTOS REGULATED WORK AREA

- A. Each worker and authorized visitor shall, each time he/she leaves the asbestos regulated work area, remove gross contamination from clothing prior to leaving the asbestos regulated work area.
  - 1. Wet wipes shall be used to wipe down the respirator and boots/boot covers.

2. All negative air pressure respirator or Powered Air Purifying Respirator (PAPR) cartridges shall be maintained in place until the worker exits the asbestos regulated work area where soil removal is occurring and enters the change area/room.
  3. When PAPR are used, the decontamination procedure shall be altered to permit reuse of the filter.
  4. The PAPR filters shall be capped prior leaving the asbestos regulated work area. The surface of the PAPR and the filter shall be washed, taking care not to wet the filter interior.
  5. The flow rate through the filter shall be tested prior to reuse. A minimum of 4 cubic feet per minute (CFM) shall be required.
- B. Decontamination Protocols – PAPR decontamination protocol
1. The respirator harness shall be thoroughly decontaminated.
  2. Clean the outside of the respirator with soap and water; wet the cartridges (if negative air pressure respirators are used), remove the respirator and dispose of cartridges and wash and rinse the inside of the respirator.
  3. Contaminated work footwear shall be stored in the change room/area when not in use in the asbestos regulated work area. Upon completion of asbestos abatement, dispose of footwear as contaminated asbestos waste or clean thoroughly inside and out using soap and water before removing from asbestos regulated work area or from the change room/area. Only vinyl boots and boot covers shall be decontaminated. Leather boots exposed to the asbestos contaminated soil without over cover protection shall be disposed of as asbestos contaminated material.

### 3.5 SOIL CLEARANCE VERIFICATION SAMPLING

- A. Upon completion of asbestos-contaminated soil abatement, the Contractor shall perform clearance verification using the methods specified for suspected asbestos-containing material bulk tests. Soil shall be considered clean when verification samples show less than one percent (1%) asbestos by weight. The number of samples to be collected shall be as follows:

| Size of Contaminated Area  | Number of Bulk Samples |
|--|------------------------|
| Less than 1,000 ft <sup>2</sup>  | 3                      |
| Greater than 1,000 ft <sup>2</sup> , but less than 5,000 ft <sup>2</sup> | 5                      |
| Greater than 5,000 ft <sup>2</sup>                                       | 7                      |

### 3.6 PROTECTION OF ADJACENT WORK AREAS

- A. Asbestos Abatement/Demolition work shall be performed without contamination of adjacent work areas. Where such work or area is contaminated as verified by the Engineer using visual inspection and/or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor as deemed appropriate by the Engineer.

### 3.7 ASBESTOS HANDLING PROCEDURES

- A. The Contractor shall employ proper handling procedures in accordance with 29 CFR 1926 and 40 CFR 61, Subpart M and the design analysis requirements herein. The specific Abatement/Demolition techniques and items identified shall be detailed in the Contractor's AHADP including but not limited to details of construction materials, equipment, and handling procedures.

### 3.8 AIR SAMPLING

- A. The Engineer shall perform sampling and analysis of airborne concentration of asbestos fibers shall be performed in accordance with CFR 29 Part 1926 Section 1926.1101, the Contractor's AHADP, and as specified herein.
- B. The Contractor shall perform personal air monitoring. Samples shall be taken for at least 25 percent of the workers in each shift or a minimum of two -- whichever is greater. Results of the personal samples shall be posted at the job site and made available to the Engineer.
- C. The Contractor shall maintain a fiber concentration inside the regulated work area equal to or less than 0.1 f/cc expressed as an 8 hour, TWA during the conduct of the asbestos Abatement/Demolition.
- D. If fiber concentration rises above 0.1 f/cc, work procedures shall be investigated with the Owner/Engineer to determine the cause.
- E. At the discretion of the Engineer, fiber concentration may exceed 0.1 f/cc but shall not exceed 1.0 f/cc expressed as an 8-hour TWA.
- F. The Contractor's workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as averaged over a sampling period of 30 minutes.
- G. The Contractor shall stop work immediately and notify the Engineer should either of the following occur:
  - 1. An environmental concentration of 1.0 f/cc expressed as an 8-hour TWA, or
  - 2. A personal excursion concentration of 1.0 f/cc expressed as a 30-minute sample occurs inside the regulated work area.
- H. The Contractor shall then implement additional engineering controls and work practice controls to reduce airborne fiber levels below these prescribed limits in the work area. Work shall not restart until authorized by the Engineer.

### 3.9 ANALYTICAL REQUIREMENTS

- A. The Owner shall provide an independent testing laboratory with qualified analysts and appropriate equipment to conduct sample analyses of air samples using the methods prescribed in 29 CFR 1926 Section 1926.58 to include NIOSH Pub No. 84-100 Method 7400. Sampling performed in accordance with 29 CFR 1926 Section 1926.1101
- B. For personal sampling required by 29 CFR 1926 Section 1926.1101 and the NIOSH Pub No. 84-100 Method 7400 shall be used for sampling and Phase Contrast Microscopy (PCM) for analysis.
- C. The final clearance air samples shall be collected and analyzed as indicated in NIOSH Pub No. 84-100 Method 7400 (PCM).
- D. For environmental and final clearance samples, sampling shall be conducted at a sufficient velocity and time to collect a sample volume necessary to establish the limit of detection of the method used at 0.005 f/cc. Asbestos fiber concentration confirmation of the total fiber concentration results of environmental, quality assurance and final air clearance samples, collected and analyzed by NIOSH Pub No. 84-100 Method 7400, may be conducted.
- E. Air monitoring results shall be calculated at the 95 percent upper confidence level.

### 3.10 SAMPLING PRIOR TO ASBESTOS WORK

- A. The baseline air sampling shall be established one day prior to demolition operations for each Abatement/Demolition area on the site. The background shall be established by performing area sampling in similar but uncontaminated sites. Air samples shall be collected at a minimum of three locations

### 3.11 SAMPLING DURING ASBESTOS ABATEMENT/DEMOLITION WORK

- A. The Contractor's CIH shall provide personal sampling and the Engineer shall provide area sampling as indicated in 29 CFR 1926 Section 1926.1101, State of Nebraska and local requirements, and in accordance with the Contractor's AHADP.

### 3.12 SAMPLING AFTER FINAL CLEAN-UP (CLEARANCE SAMPLING)

- A. Prior to conducting final air clearance monitoring, the Contractor and the Engineer shall conduct a final visual inspection of the Contractor's final cleanup of the abated asbestos regulated work area. Final clearance air monitoring shall not begin until acceptance of this final cleaning by the Engineer.

### 3.13 NIOSH METHOD

- A. For PCM sampling and analysis using NIOSH Pub No. 84-100 Method 7400, the fiber concentration inside the abated asbestos regulated work area for each airborne sample shall be less than 0.01 f/cc. Decontamination of the abated asbestos regulated work area is considered complete when every PCM final clearance sample is below the clearance limit. If any sample result is greater than 0.01 f/cc, the asbestos fiber concentration from that same filter shall be confirmed using NIOSH Pub No. 84-100 Method 7402 (TEM) at Contractor's expense. If any confirmation sample result is greater than 0.01 f/cc, then Abatement/Demolition is incomplete and re-cleaning is required. Upon completion of any required re-cleaning, re-sampling with results to meet the above clearance criteria is required.

### 3.14 SITE INSPECTION

- A. While performing asbestos removal work, the Contractor shall be subject to on-site inspection by the Engineer who may be assisted by or represented by quality assurance, safety and industrial hygiene personnel. If the work is found to be in violation of this design analysis, the Engineer may issue a stop work order to be in effect immediately and until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.

### 3.15 CLEAN-UP AND DISPOSAL

- A. Waste asbestos material shall be disposed of at an EPA, State of Nebraska and local approved asbestos landfill. For temporary storage, sealed impermeable containers shall be stored in an asbestos waste load-out unit or in a storage/transportation conveyance (i.e.; dumpster, roll-off waste boxes, etc.) in a manner as accepted by and in an area as assigned by the Engineer. Procedure for hauling and disposal shall comply with 40 CFR 61, Subpart M, State of Nebraska, regional, and local standards.

### 3.16 TITLE TO MATERIALS

- A. Material resulting from Abatement/Demolition work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, State of Nebraska, and Federal regulations and herein.

### 3.17 COLLECTION AND DISPOSAL OF ASBESTOS

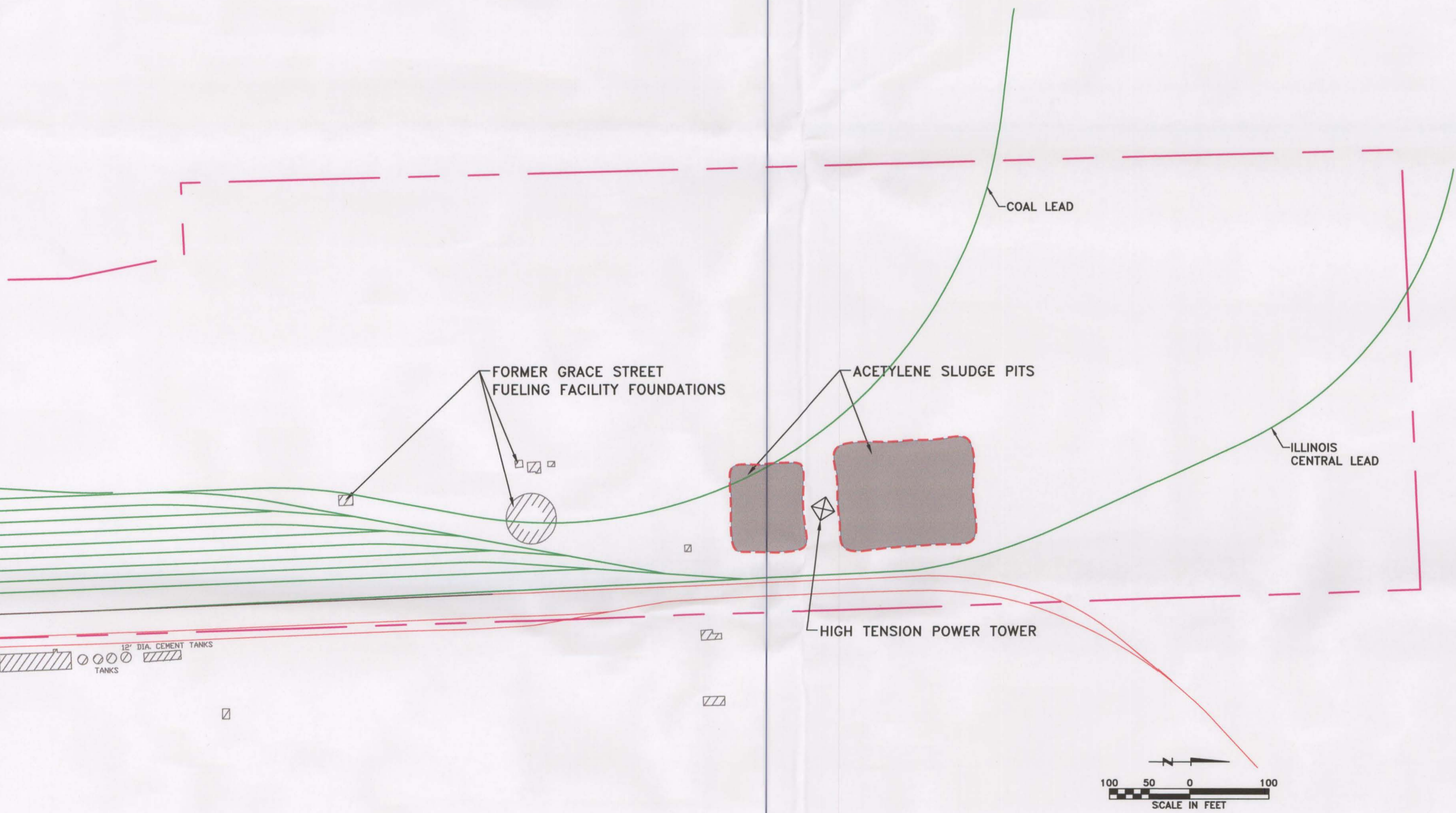
- A. Asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing, shall be collected and placed in sealed leak-tight, containers (e.g. double 6-mil plastic bags), sealed 6-mil double wrapped polyethylene sheet, sealed fiberboard boxes, or other approved containers. Waste within the containers must be wetted in case the container is breached. A warning label and Department of Transportation (DOT) label shall be affixed or preprinted on each bag.

### 3.18 ASBESTOS WASTE SHIPMENT RECORD

- A. The Contractor shall complete and provide final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 61, Subpart M and other required State of Nebraska waste manifest shipment records within 3 days of delivery to the landfill.
- B. END OF SECTION 02270



- LEGEND**
- PROPOSED TRACK
  - EXISTING TRACK
  - LIMITS OF EXCAVATION



March 28, 2000 8:28:22 a.m.  
 Drawing: T:\91MC204\SP0A\T04100\FICSD.DWG (DAP)  
 Xrefs: uprrproplns2.DWG LEAD2.DWG P-MWs.DWG sdcex2.DWG DRILLHOLES.DWG

| REV. | DESCRIPTION OF REVISION | BY | DATE |
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**UNION PACIFIC RAILROAD COMPANY**

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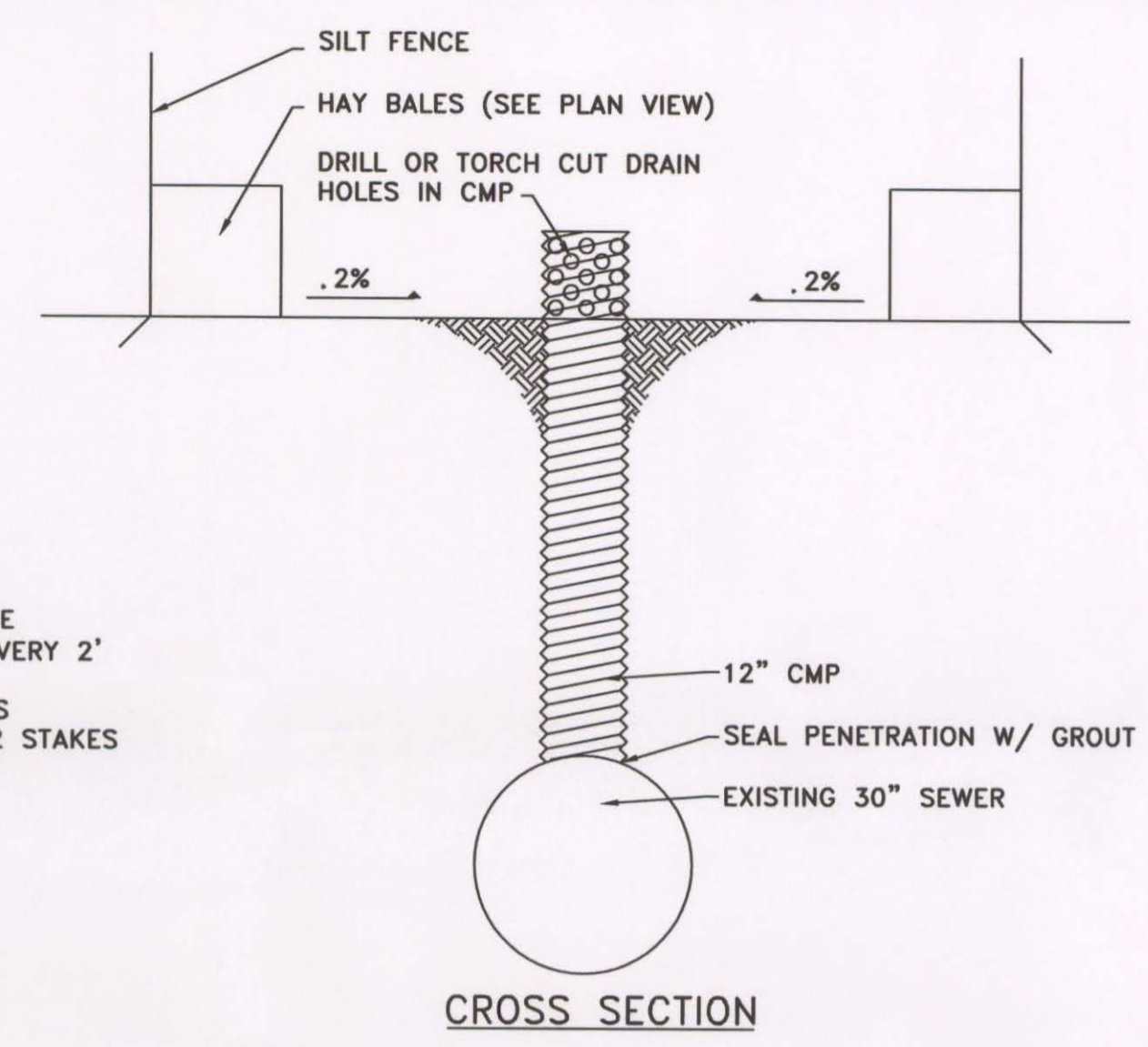
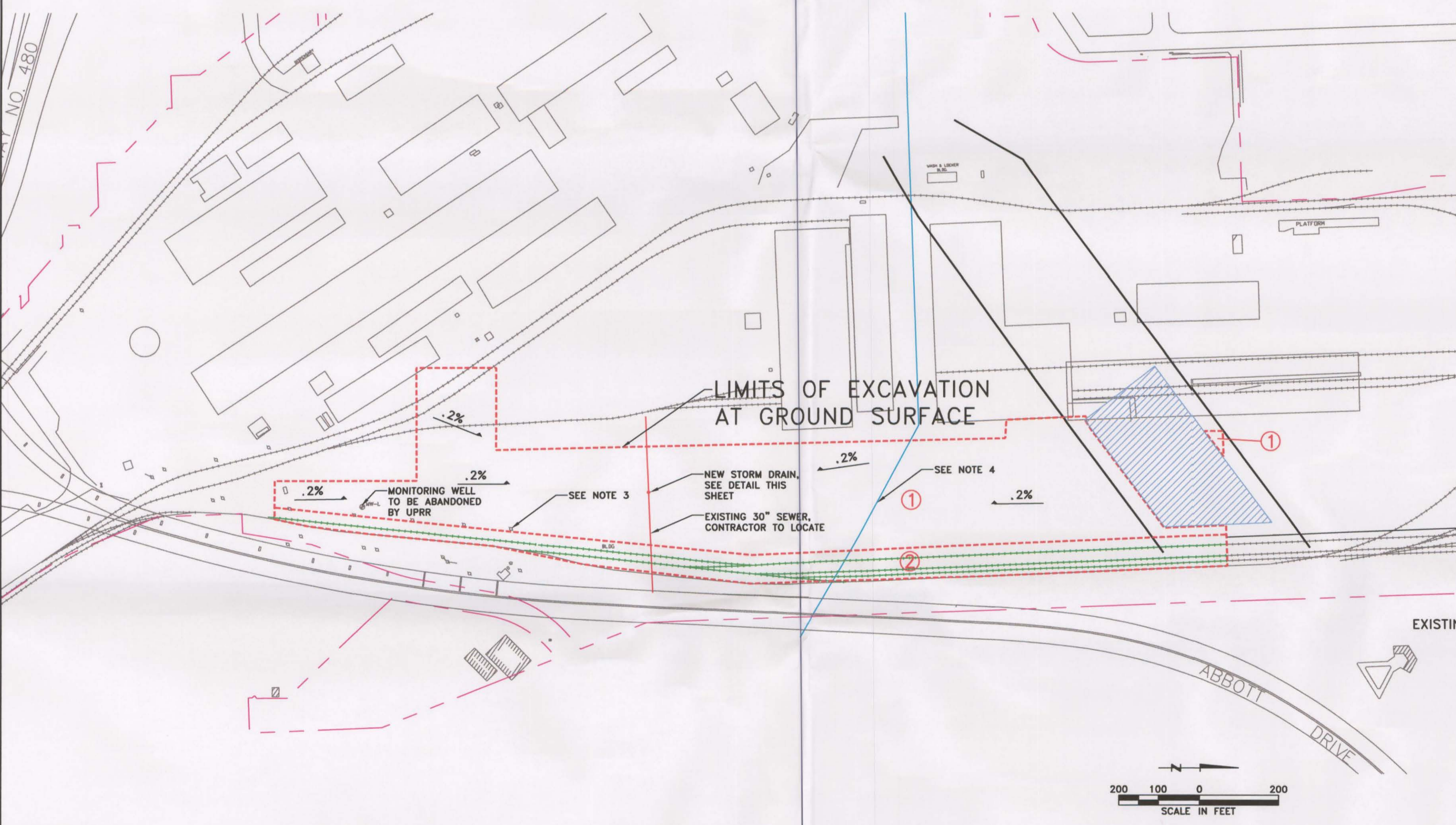
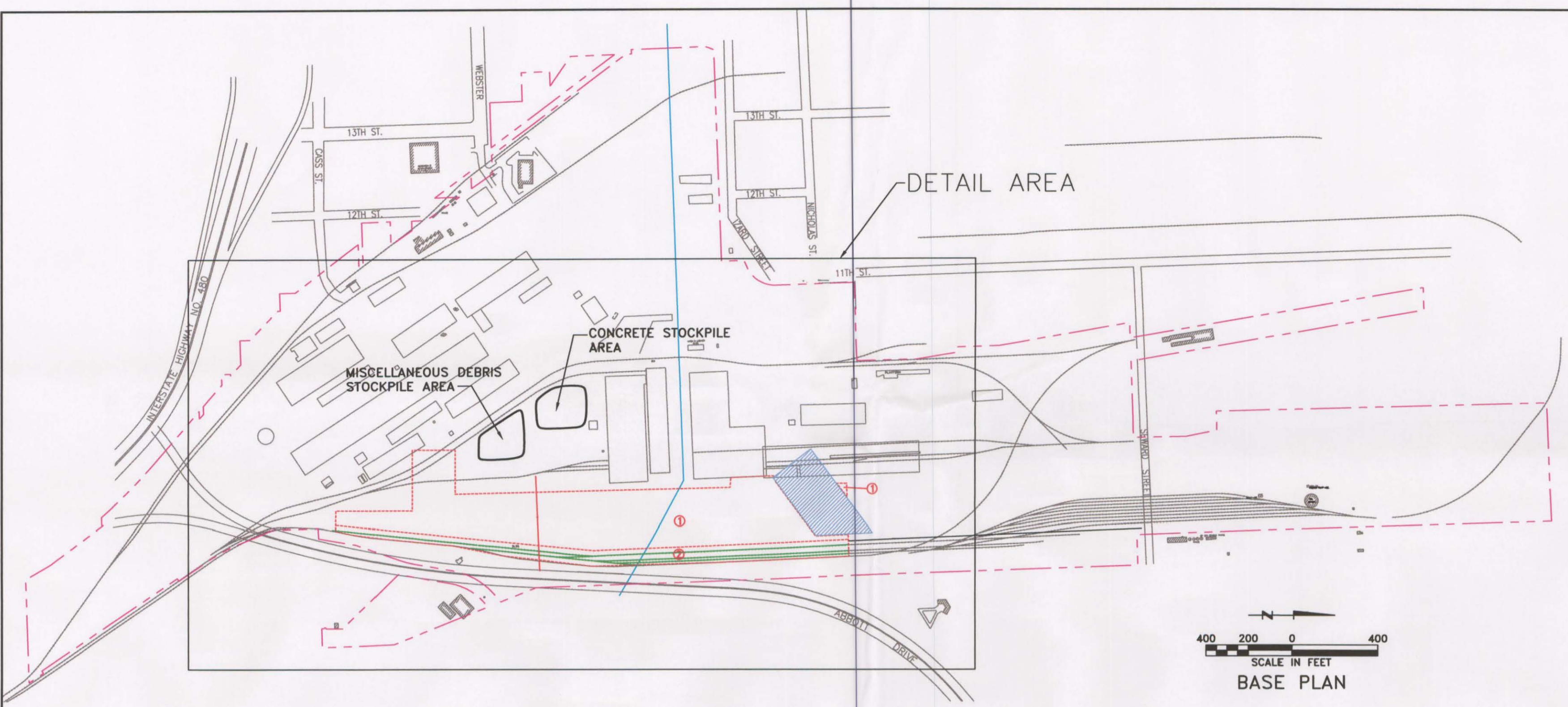
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 Omaha, Nebraska 68154

|           |          |
|-----------|----------|
| DESIGNED: | JAS      |
| DRAWN:    | DAP      |
| CHECKED:  | CRP      |
| REVIEWED: | JJH      |
| APPROVED: |          |
| DATE:     | 02/11/00 |

|  |                 |                         |
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| UNION PACIFIC RAILROAD                         | OMAHA, NEBRASKA | REVISION:               |
| ACETYLENE SLUDGE PITS INTERIM ACTION SITE PLAN |                 | PROJECT: 45-091MC204.04 |
|  |                 | DRAWING:                |
|  |                 | SHEET 5 OF 5            |



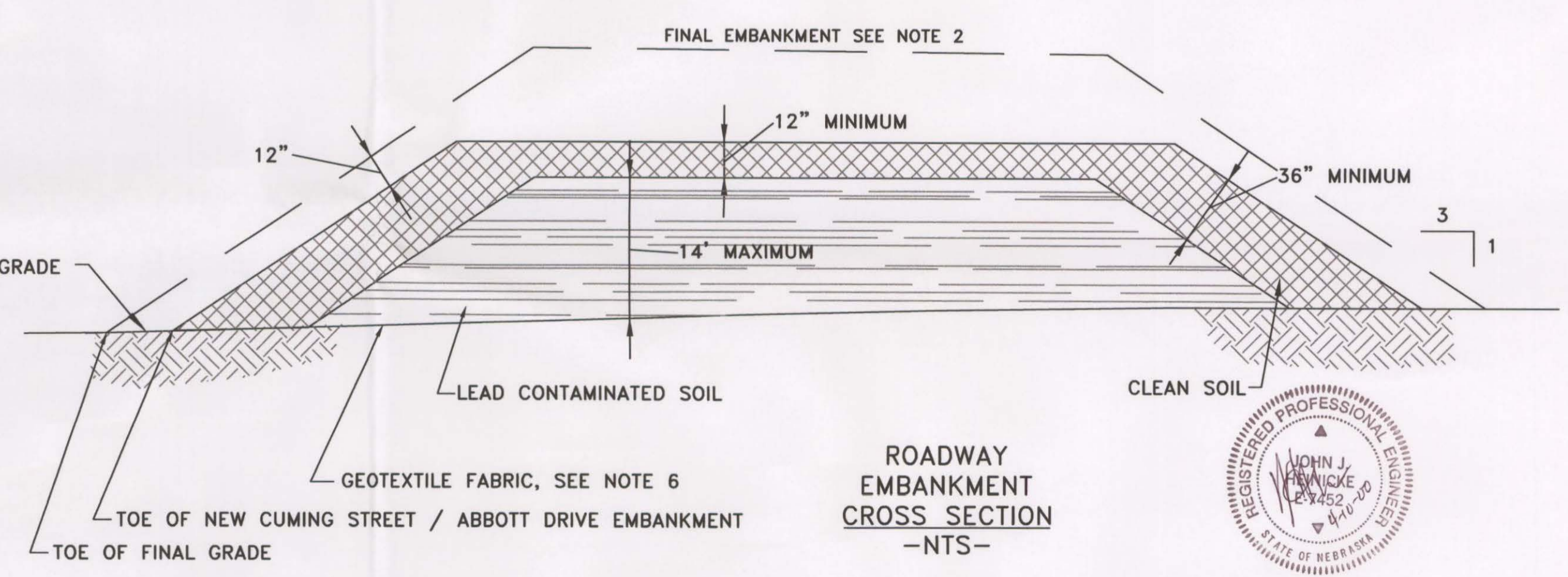
STORM DRAIN DETAIL  
-NTS-

LEGEND

- LEAD CONTAMINATED SOIL PLACEMENT AREA
- SOIL TO BE REMOVED IN FALL OF 2000
- SOIL TO BE REMOVED IN SPRING OF 2001
- TRACK TO BE REMOVED IN SPRING OF 2001
- TOE OF NEW CUMING ST / ABBOTT DRIVE EMBANKMENT
- 16" METROPOLITAN UTILITIES DISTRICT (MUD) WATER MAIN

NOTES

1. GEOTECHNICAL MONITORING EQUIPMENT AND GEOTEXTILE FABRIC SHALL BE PLACED BY OTHERS PRIOR TO PLACEMENT OF FILL MATERIALS.
2. FILL PLACEMENT TO BRING ROADWAY EMBANKMENT TO FINAL GRADE SHALL BE BY OTHERS AFTER LEAD CONTAMINATED SOIL AND COVER IS PLACED.
3. ALL OVERHEARD POWER/COMMUNICATION POLES SHALL REMAIN UNLESS DIRECTED BY THE ENGINEER/OWNER.
4. CONTRACTOR SHALL LOCATE AND EXPOSE 16" WATER MAIN TO VERIFY LOCATION AND DEPTH. CONTRACTOR SHALL PROTECT WATER LINE FROM DAMAGE DUE TO HEAVY EQUIPMENT TRAVEL AND EXCAVATION ACTIVITIES WHICH WOULD AFFECT THE PIPE DURING PROJECT ACTIVITIES.
5. CONTRACTOR SHALL GRADE EXCAVATION TO DRAIN AS SHOWN FOLLOWING NOTIFICATION BY ENGINEER.
6. CONTRACTOR SHALL PLACE GEOTEXTILE FABRIC PER SPECIFICATION SECTION 02200.



ROADWAY EMBANKMENT CROSS SECTION  
-NTS-



March 22, 2000 11:40:57 a.m.  
Drawing: T:\91MC204\SP02\T01200\FIG4D.DWG (DAP)  
Xrefs: LEAD2.DWG P-MW.DWG sdcw2.DWG DRILLHOLES.DWG uprrpropline.DWG

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DESIGNED: JAS

DRAWN: DAP

CHECKED: CRP

REVIEWED: JJH

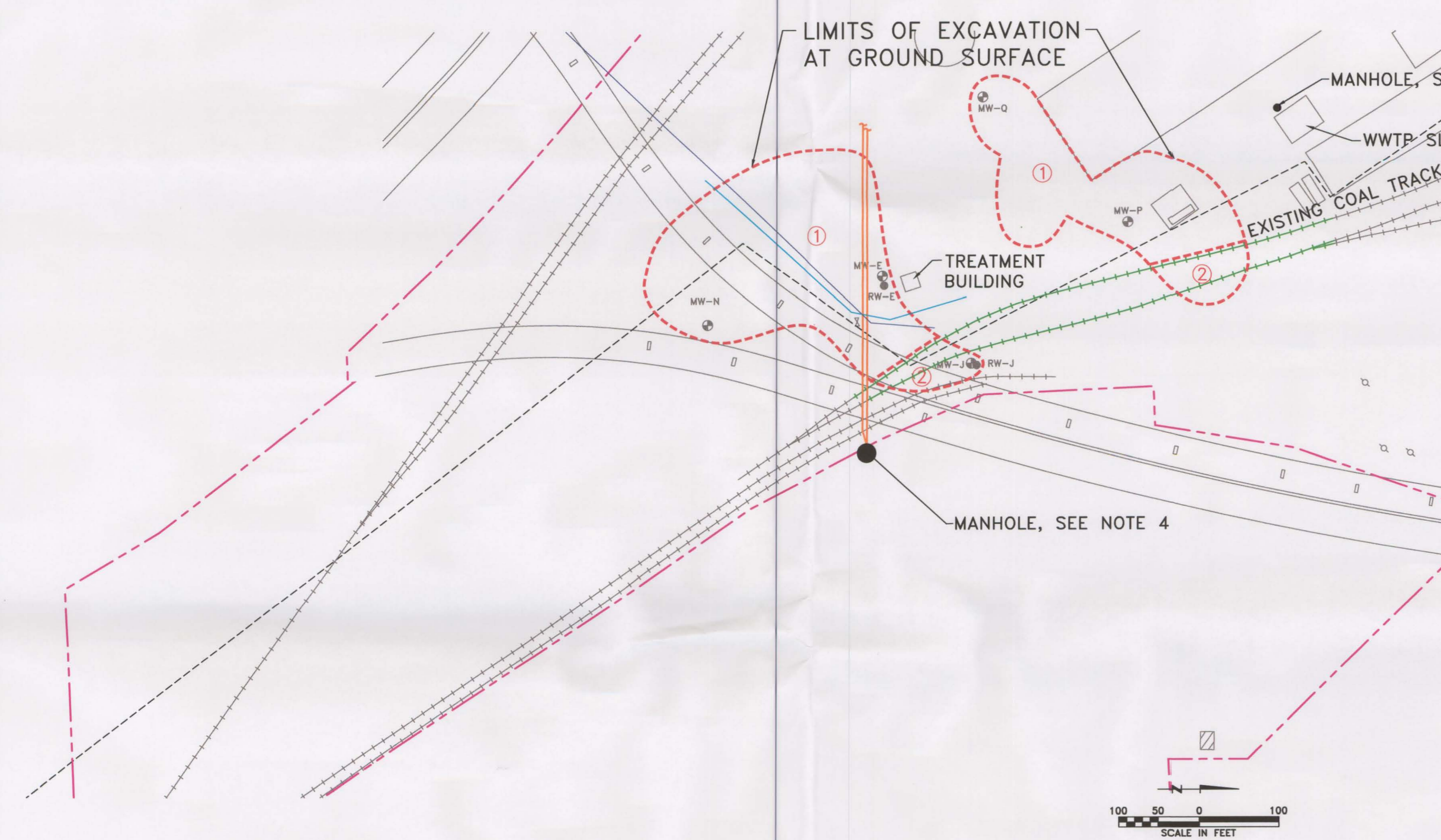
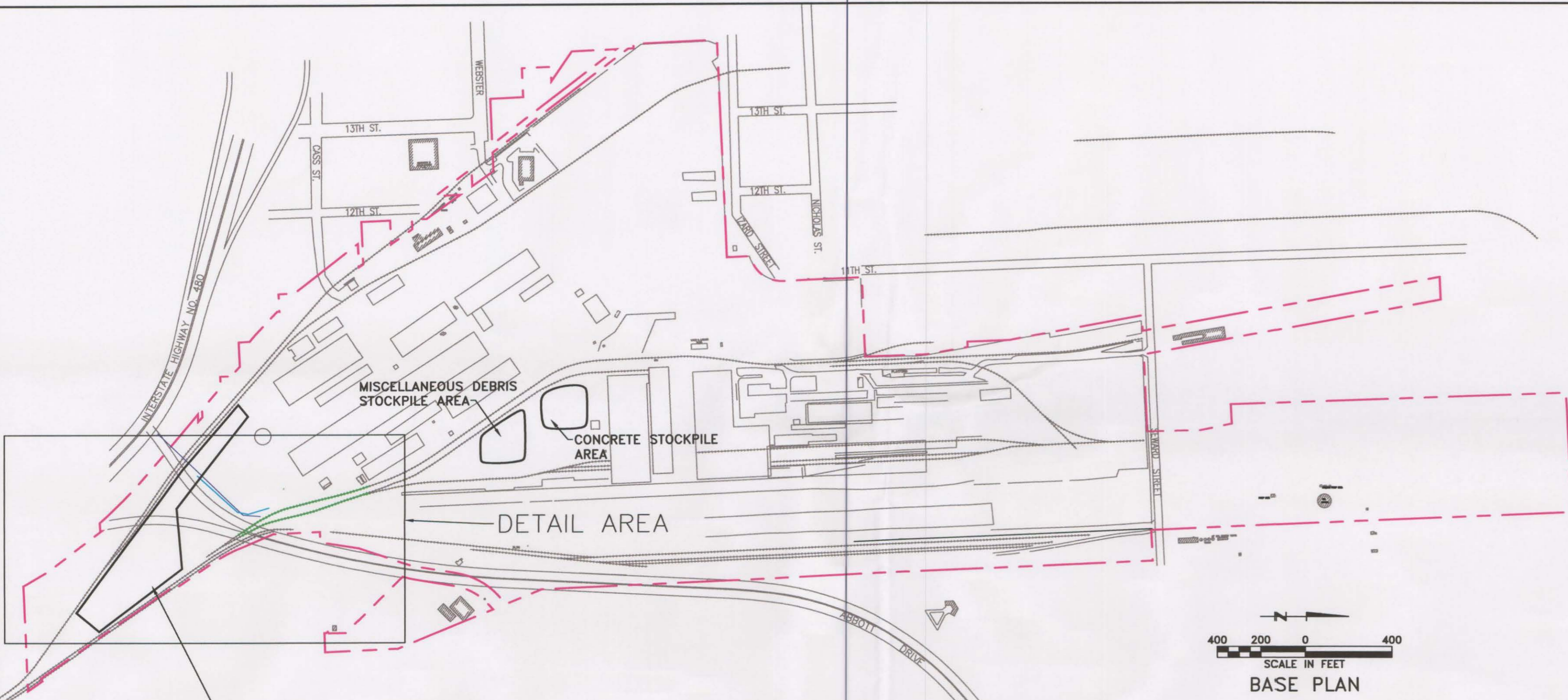
APPROVED:

DATE: 02/11/00

UNION PACIFIC RAILROAD OMAHA, NEBRASKA

CORRECTIVE MEASURES IMPLEMENTATION - LEAD SITE PLAN

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| REVISION:               |  |
| PROJECT: 45-091MC204.04 |  |
| DRAWING:                |  |
| SHEET 4 OF 5            |  |



LEGEND

- MONITORING WELL
- RECOVERY WELL
- TRACK TO BE REMOVED IN AUGUST OF 2000
- OIL PIPELINE
- 42" & 44" SEWER LINES
- SOIL TO BE REMOVED JUNE/JULY 2000
- SOIL TO BE REMOVED SEPTEMBER 2000
- BRIDGE PIER
- HIGH TENSION POWER POLE
- OHE POLE - TO REMAIN UNLESS DIRECTED BY OWNER/ENGINEER.
- EXISTING ELECTRICAL CONDUIT. LOCATION APPROXIMATE, TO BE VERIFIED BY CONTRACTOR.
- ABANDONED WATER LINE. LOCATION APPROXIMATE.

NOTES

- CONTRACTOR MAY DISCHARGE WATER TO MANHOLE ADJACENT TO FORMER WWTP SLAB AT THE DIRECTION OF THE ENGINEER.
- CONTRACTOR MAY USE FORMER WWTP SLAB TO STAGE DEWATERING TANKS.
- PLACE ALL BACKFILL AS STRUCTURAL FILL PER SPECIFICATION SECTION 2200.
- CONTRACTOR TO SEAL REMAINING SEWER PER SPECIFICATION SECTION 2250.
- CONTRACTOR SHALL MAINTAIN AT LEAST 15' CLEARANCE FROM NORTHBOUND ABBOTT DRIVE PIERS.
- CONTRACTOR SHALL MAINTAIN AT LEAST 5' OF CLEARANCE FROM END OF TIES.

March 23, 2000 2:17:56 p.m.  
Drawing: 1:\91MC204\SP04\T01100\FIG3D.DWG (DAP)  
Xref: 1:\91MC204\SP04\T01100\FIG3D.DWG (DAP)  
Xref: 1:\91MC204\SP04\T01100\FIG3D.DWG (DAP)

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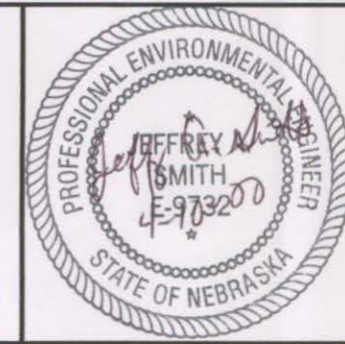
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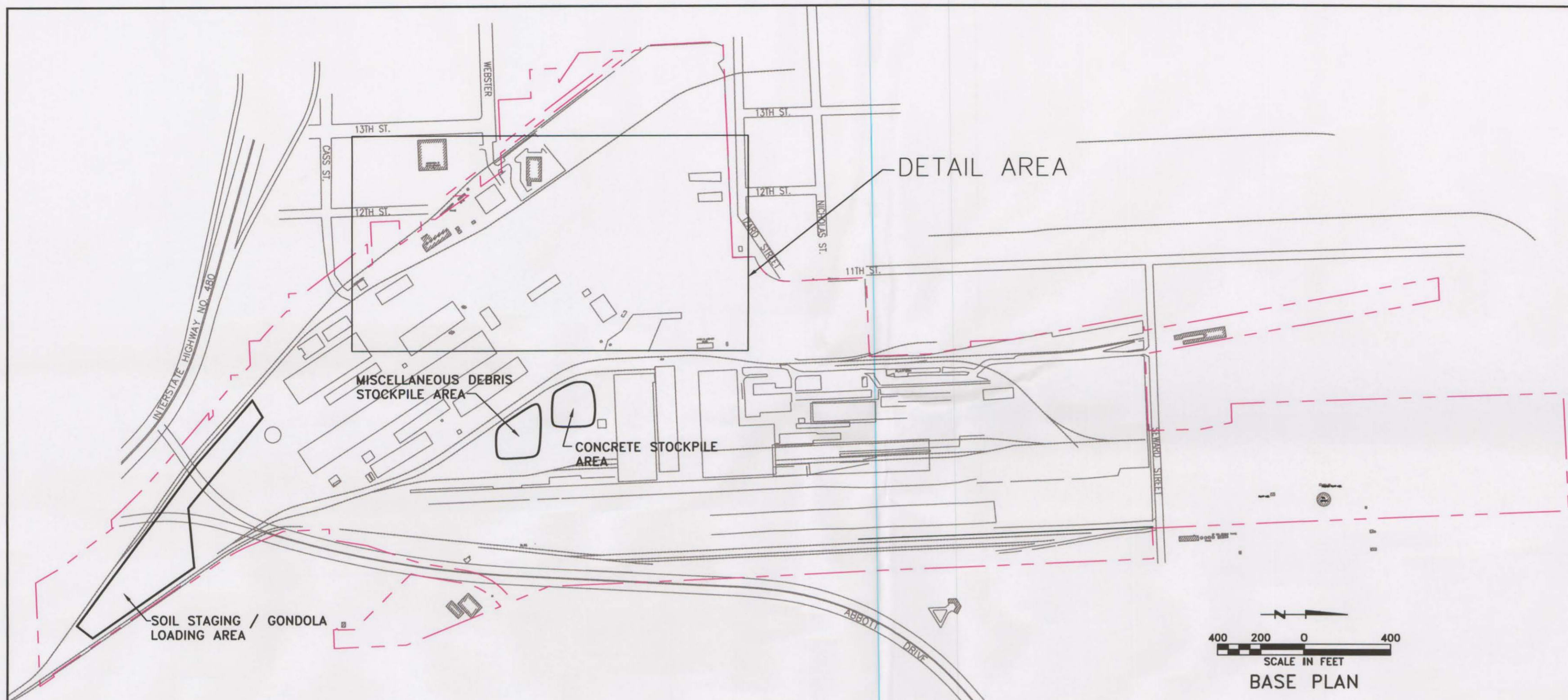
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| DRAWN:    | DAP      |
| CHECKED:  | CRP      |
| REVIEWED: | JUH      |
| APPROVED: |          |
| DATE:     | 02/11/00 |

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| UNION PACIFIC RAILROAD                  | OMAHA, NEBRASKA |
| FREE PHASE RECOVERY AREA INTERIM ACTION | SITE PLAN       |

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| REVISION:    |                |
| PROJECT:     | 45-091MC204.04 |
| DRAWING:     |                |
| SHEET 3 OF 5 |                |



N 549042  
E 2757778  
N 549062  
E 2757778  
N 549042  
E 2757798  
N 549062  
E 2757798

N 548849  
E 2758200  
N 548868  
E 2758200  
N 548848  
E 2758220  
N 548862  
E 2758220

BACKFILL PLACED AS  
STRUCTURAL FILL

NOTES:  
1. BACKFILL TO BE PLACED AS  
NON-SUPPORTING FILL AS PER  
SPECIFICATION SECTION 2200 EXCEPT AS  
NOTED.

LEGEND:  
--- LIMITS OF EXCAVATION (0-1 FEET)  
--- LIMITS OF EXCAVATION (1.5-3 FEET)

SCALE IN FEET  
100 50 0 100  
ASBESTOS IN SOIL

March 22, 2000 11:50:50 a.m.  
Drawing: TA\91MC204\SP04\T05100\FIG2D.DWG (DAP)  
Xref: P-WEB.DWG edee2.DWG DRILLHOLES.DWG uprpropline.DWG

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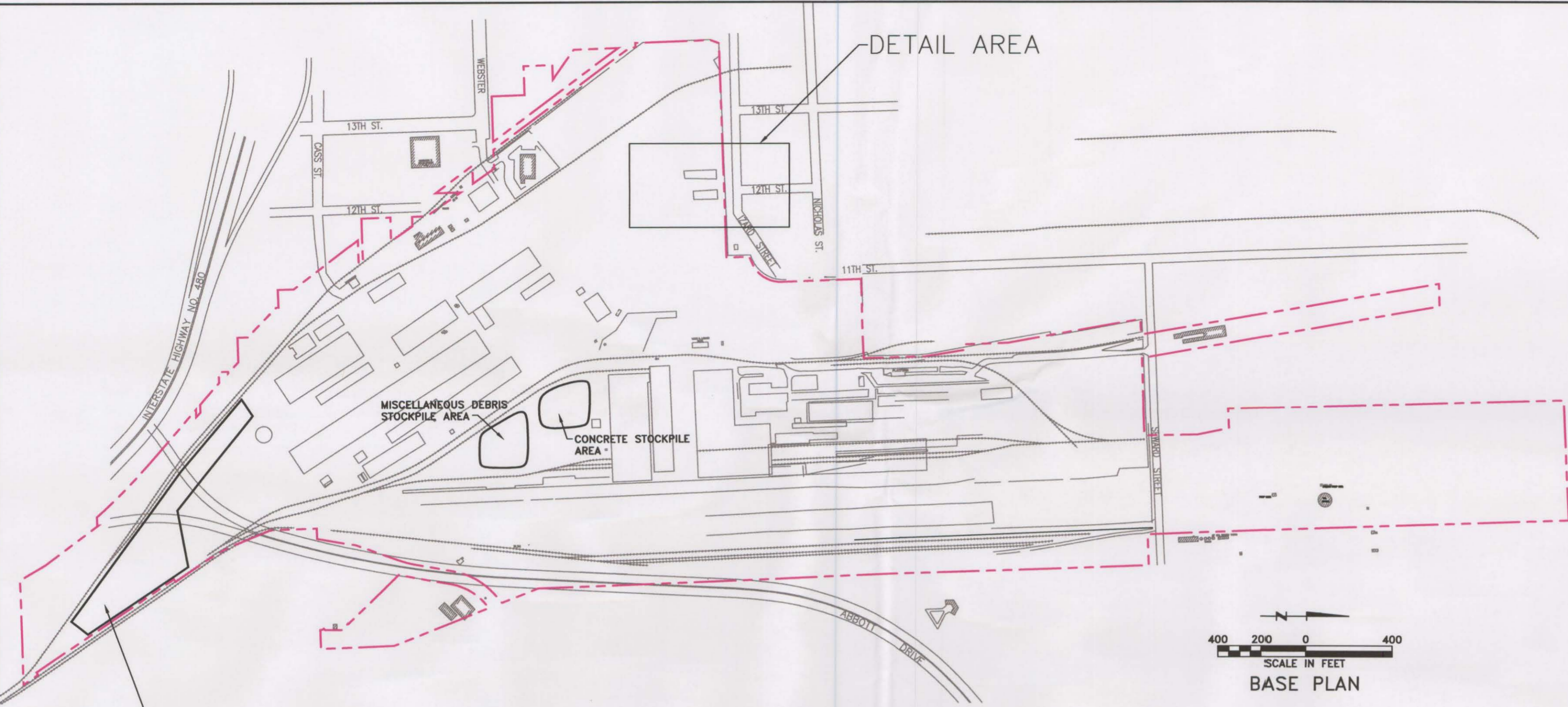


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| DESIGNED: | JAS      |
| DRAWN:    | DAP      |
| CHECKED:  | CRP      |
| REVIEWED: | JJH      |
| APPROVED: |          |
| DATE:     | 02/11/00 |

UNION PACIFIC RAILROAD OMAHA, NEBRASKA

ASBESTOS INTERIM ACTION  
SITE PLAN

|              |                |
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| REVISION:    |                |
| PROJECT:     | 45-091MC204.04 |
| DRAWING:     |                |
| SHEET 2 OF 5 |                |

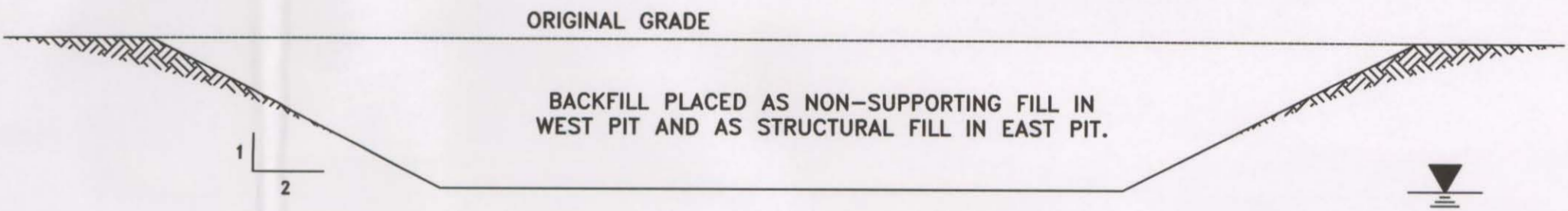
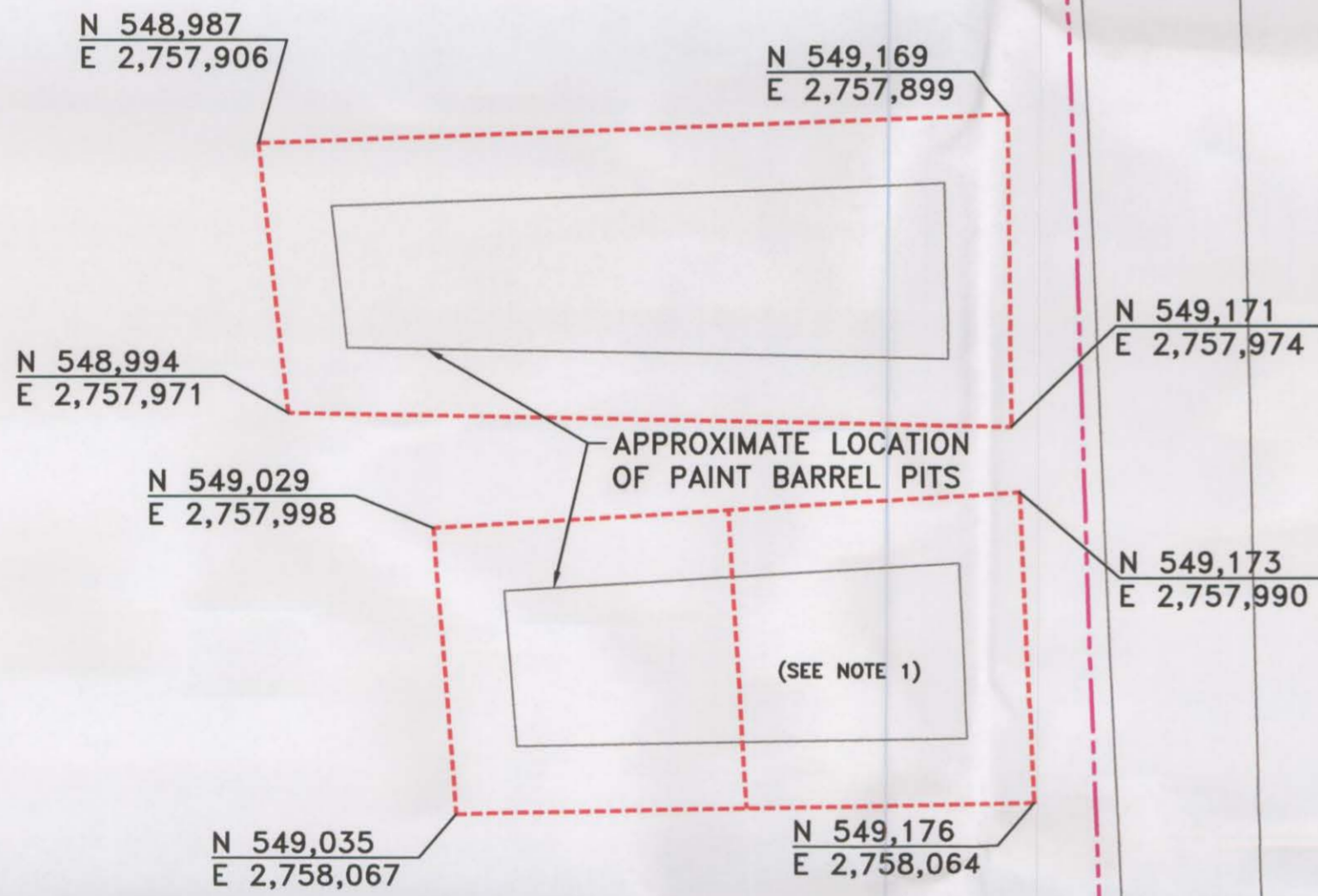


LEGEND

--- LIMITS OF EXCAVATION AT GROUND SURFACE

NOTES

1. CONTRACTOR SHALL EXCAVATE NORTH HALF OF EAST PIT FIRST AS PER SPECIFICATION SECTION 2250.



1. EXCAVATE TO WATER TABLE (ASSUMED TO BE APPROXIMATELY 8 FEET BGS)  
2. MAINTAIN 2H:1V SIDE SLOPES  
3. UPON NOTIFICATION BY ENGINEER, BACKFILL EXCAVATION TO ORIGINAL GRADES PER SPECIFICATION SECTION 2200


EXCAVATION CROSS SECTION  
-NTS-

March 22, 2000 10:19:02 a.m.  
Drawing: 1\91MC204\SPMA\T03100\FIG1D.DWG (DAP)  
Xrefs: sdox2.DWG P-MW.DWG F3-T1000.DWG DRILLHOLES.DWG uprrpropline.DWG

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DESIGNED: JAS  
DRAWN: DAP  
CHECKED: CRP  
REVIEWED: JJH  
APPROVED:  
DATE: 02/11/00

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|---|-----------------|-------------------------|
| UNION PACIFIC RAILROAD                        | OMAHA, NEBRASKA | REVISION:               |
| PAINT BARREL PITS INTERIM ACTION<br>SITE PLAN |                 | PROJECT: 45-091MC204.04 |
|   |                 | DRAWING:                |
|   |                 | SHEET 1 OF 5            |



# UNION PACIFIC RAILROAD COMPANY

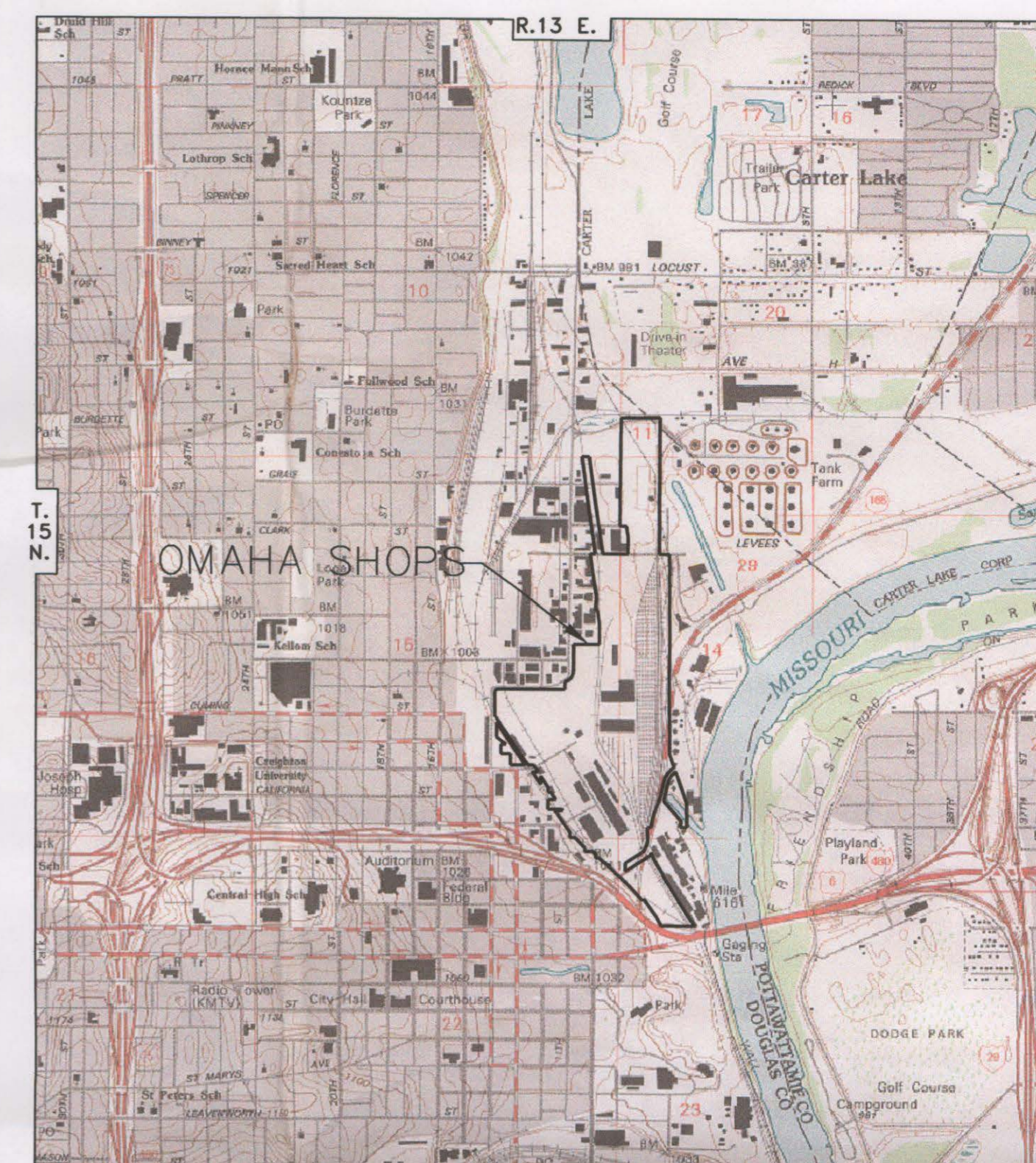


## CORRECTIVE MEASURES IMPLEMENTATION AND INTERIM ACTION REMOVALS OMAHA SHOPS FACILITY OMAHA, NEBRASKA

U.S. EPA DOCKET NO. RCRA-7-2000-0026  
RCRA I.D. NO. NED000829754

PREPARED BY

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LOCATION MAP



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